WORLD RELIEF CORPORATION
NICARAGUA CHILD SURVIVAL VIII PROJECT

DETAILED IMPLEMENTATION PLAN

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TABLE OF CONTENTS

TABLES

Section A. DIP COUNTRY PROJECT SUMMARY TABLE (See Appendix A.)

Section B. LOCATION AND FORMAL AGREEMENTS

B.1 The project includes 3 areas: Managua, District 6 which includes Silvia Ferrufino and Villa Venezuela municipalities (hereafter known as M6), Rio San Juan (RSJ) and Tipitapa (TPT), all considered high risk health areas. M6 and RSJ will be funded primarily by a centrally funded USAID grant and TPT will be funded by a USAID Mission grant. M6 is urban (population density = 6,606/km²)[1] and is characterized by many transitional shanty towns, high unemployment and migration. TPT is primarily urban, with some periurban and rural areas (population density = 91/km²)[2]. Together, these two areas have the highest mortality and morbidity in Managua. M6 and TPT are in the Local Integrated Health Attention System (SILIAS) Oriental (Region III). RSJ, on the other hand, is a rural area (population density = 5/km²)[3] characterized by significant poverty. It serves as a magnet for the settlement of large numbers of returning refugees, ex-resistance fighters and ex-soldiers. Heavy rains 10 months of the year (annual rainfall is 100-120 inches)[4], poor roads and access only by water in some areas severely limits health services by the overburdened Nicaraguan Ministry of Health (MINSA). RSJ is in a separate SILIAS: Region IX or Special Zone III.

The total population of the Child Survival Project (CSP) area is 222,563'. Nicaragua is 97% Christian (78 % Catholic; 16% Protestant or Evangelical; 3 % other) and 3 % atheist[6]. The baseline K&P surveys for each of the three areas reveal a literacy rate of 84% for M6, 73% for TPT and 59% for RSJ. See Appendix B for maps of the three CSP areas and MINSA health facilities.

B.2 WRC chose these locations based on the need and because MINSA joined WRC's local church partners to request health assistance in these areas. See Appendix C for request letters.

Throughout Nicaragua during the Sandinista period, community development committees were formed. These committees were made-up of representatives from local health facilities, government officials, community leaders, market vendors, teachers, brigadistas (health volunteers) and midwives and are still active in some areas of M6 and TPT, and RSJ.

Project staff face the following constraints in the entire CSP:

1. Political instability.
2. High rate of migration, especially in M6 and RSJ.
3. Frequent MINSA strikes.
4. High percentage of single mothers with no work or low paying jobs.
5. The diverse nature of each project area requiring different strategies to assure success.
6. Inadequate MINSA health records.

One unique constraint in TPT is that MINSA has coordinated their efforts with an organization called CLAP (Consejo Latinoamericana de Perinatologia).' MINSA is using different vaccination cards, growth charts and maternal care cards that CLAP has provided.

During the baseline survey in TPT it became apparent that these cards were often improperly filled out. They did not have full immunization dates, only the month and year or no dates at all. The difference in the cards, and the fact that the cards are often filled out incorrectly will make it difficult to accurately measure objectives in the health information system (HIS). Many areas of RSJ have additional constraints which include difficult transport due to poor roads and heavy rains, and active guerrilla groups in some communities.

The current structure of MINSA divides the country into Local Integrated Health Attention Systems (SILAIS). Each SILAIS has 5 health service structures: (1) hospitals, (2) health centers, (3) medical posts, (4) health posts and (5) base houses. Regional hospitals act as referral centers. Health centers are staffed with at least 2 doctors, 2 licensed nurses and several auxiliary nurses. Services provided at health centers include prenatal care, family planning services, growth monitoring and nutrition counseling, immunizations, ORS, dental and lab services. Medical posts are staffed with 1 doctor, 1 licensed nurse and an auxiliary nurse. Medical posts provide the same services as health centers with the exception of dental care and laboratory services. Health posts (approx. 1 health post13000 people) are staffed by auxiliary nurses who provide immunizations, ORS and basic medications. In M6, health centers are defined as either type A or type B. Type A centers have up to 10 doctors and possibly a nutritionist. Base houses (l/community) are usually homes of MINSA brigadistas and serve as a point in the community where families can obtain ORS or educational materials. However, base houses tend to focus on ORS distribution, but neglect health education.

B.3 For formal agreements with SILAIS Oriental Region III (M6 and TPT), Region IX (RSJ), the government of Nicaragua, PROFAMILIA, and the Assemblies of God churches, see Appendix C.

Section C. DIP SUSTAINABILITY STRATEGY

C.l At the end of this CSVIII grant, it is expected that the following activities will be sustained:

- Changed Maternal Health Knowledge and Practices. Mothers will have increased health knowledge and will have developed good health practices related to immunization, diarrhea1 disease control, nutrition, ALRI, prenatal care, birthspacing and malaria prevention. Mothers will also have learned how to teach these health habits to their growing children and neighbors.

- Increased Community Demand for MENSA Services. The WRC approach will be to mobilize mothers to use MINSA EPI, ORS, ALRI, family planning and malaria services by creating a greater demand for these services.

Strengthened MINSA. The current MINSA brigadistas, as well as additional CSP brigadistas will be trained by the project and thus increase their capacity for service. It is also hoped that

at the end of the project some CSP brigadistas will be phased into the MINSA system and provide services to those who are currently not being reached by MINSA.

Community Ownership/Enablement. Increasing community ownership of the project will increase its sustainability. In order to facilitate community ownership of CSP interventions, Community Health Committees (CHCs) made up of block representatives (1 to every 10 homes) and community and church leaders are being formed. These CHCs will meet monthly and will work closely with the brigadistas to solve the health problems which are present in the community.

Indicators used to track sustainability include changes in health knowledge and practice (as measured by the K&P survey), and levels of community participation including number of trained brigadistas resident in the community at the end of the project, number of CHCs functioning and number of CHC meetings per year.

C.2 Each area coordinator spoke with the local government officials, MINSA officials and (where operating) the Commission de Desarrollo (community committees with representatives from all sectors of the community). In these meetings the community priorities were stated.

Managua. District 6: Community leaders stated the top three priorities as 1) clean up of solid and liquid trash which will help rid the community of disease, 2) housing and 3) the need for potable water and electricity. MINSA officials stated that the top health priorities were 1) to increase vaccination coverage, 2) diarrhea1 disease control and 3) to decrease maternal mortality.

Tipitapa: The top priorities of the Commission de Desarrollo were 1) to clean up trash and dirty water in the streets which makes children sick and 2) to train the TBAs and brigadistas.

Rio San Juan: The top priorities of the Commission de Desarrollo were 1) sanitation and potable water, 2) street construction and 3) education. MINSA priorities are 1) malaria control, 2) diarrhea control and 3) ALRI management. MINSA officials also stated that better training of health personnel was needed.

The priorities clearly show that families are concerned with the health of their children and MINSA priorities are very much in line with the CSP interventions. Mechanisms the CSP will employ to foster community ownership include forming CHCs which will meet monthly to discuss health problems and solutions. These CHCs will be involved in providing support to the brigadistas by extending a network of block representatives who collect information-for the HIS on a monthly basis, distributing ORS and providing other solutions for CS issues as they arise. Mother-s-groups and pregnant womens' clubs which allow women to share experiences and discuss health issues will also be formed. Church involvement will include having regular meetings with pastors and giving CS presentations to church congregations. The CSP will also develop curriculum for school teachers to educate school children in **CS** interventions. School children will be involved in the promotion of CS interventions such as

immunizations, by going home and telling mothers when and where EPI sessions are taking place.

Public support over time will be monitored by 1) recording and assessing the percent of mothers who attend the mothers group meetings in the community, 2) activity of the CHCs, 3) through monthly and quarterly reports which show progress on project objectives and 4) through focus groups which will be used to see if there has been a change in the mother's knowledge and beliefs, as well as to assess their involvement in the project and issues which may be barriers to their involvement.

C.3 Collaboration currently exists between World Relief Nicaragua (WRN) and Project Hope Nicaragua to adapt and publish educational materials from Project Hope Honduras for use in Nicaragua. UNICEF will be donating supplies of ORS to WRN for the CSP and Sight and Life will be donating vitamin A capsules. In addition, the Central American Mission (CAM) and the Instituto de Desarrollo Social de Las Asembleas de Dios (IDSAD) will be providing free use of their Bible Institutes for the training sessions of health promoters and some of their churches will provide sites for growth monitoring sessions. The CSP will set up a referral system with PROFAMILIA and training of the brigadistas in family planning will be conducted by PROFAMILIA. However, the brigadistas will not sell contraceptives for PROFAMILIA, but rather educate women on contraception, then refer women to PROFAMILIA posts. The CSP has given training on K&P surveys to Development Associates staff and has been involved in regular meetings with other PVOs involved in CS sharing lessons learned and discussing sustainability issues.

The CSP collaborates closely with MINSA on all of the project interventions. The CSP is training some of the MINSA brigadistas in each intervention and supervising them. In addition, the CSP is providing transportation for MINSA EPI workers to distant project , CSP educational materials and techniques will be shared with MINSA for the training of health staff and meetings will be held with MINSA officials each month to strategize on ways to improve the interventions. In these meetings issues of sustainability will also be discussed at length.

In-country agencies who aided WRN in the development of this DIP are MINSA, PROFAMILIA, ADRA, PAHO and UNICEF.

C.4 The CSP is creating a program which is closely aligned with the MINSA program and will discuss possibilities with MINSA for phasing over program responsibilities. In Honduras, the WRH CS project has made a formal agreement with the MOH in which the health volunteers would be phased over into the MOH system and MOH nurses would supervise their activities. WRN hopes to establish the same sort of agreement with MINSA, but before this type of agreement can be made, the CSP will need to demonstrate its effectiveness and gain credibility. The plan for strengthening the program management skills of MINSA staff includes 1) training the MINSA health educators and nursing staff in the participatory educational techniques used by the CSP, and sharing CSP educational materials,

2) training the MINSA brigadistas in CS interventions, 3) giving seminars to other MINSA staff on CS interventions such as ALRI, and 4) working with MINSA health post staff to avoid missed immunization opportunities.

C.5 Given the economic situation and cultural attitudes in Nicaragua, attempts at cost recovery do not seem feasible at this point, but will be explored during the expansion phase of the project.

Section D. PROJECT DESIGN

D.1 The main findings of the baseline study with regard to children O-23 months and the health practices of mothers include the low breastfeeding rates (M6, 50%; TPT, 52%; RSJ, 59%) with exclusive breastfeeding until four months extremely low at 2% in M6 and TPT, and 12% in RSJ. The percentages of completely immunized children were 52% in M6, 14% in TPT and 38% in RSJ. With regard to children suffering from diarrhea, only 43% in M6, 52% in TPT and 28% in RSJ were treated with ORS. Finally, 79% of mothers in M6, 78% of mothers in TPT and 70% of mothers in RSJ did not know which foods contain vitamin A.

D.2 The greatest input into the project is the training of the brigadistas to enable them to motivate mothers to increase knowledge and change behaviors. By the end of the project, WRN anticipates the achievement of the following outputs. The first percentage refers to M6 and TPT, the second percentage refers to RSJ. Where only one percentage is cited, the same objective has been set for the entire CSP.

1. 70% and 60% of children 12-23 months will have complete immunization coverage.')
2. 70% and 60% of women 15-49 will have received two doses of tetanus toxoid (TT).)
3. 65% and 50% of mothers of children O-23 months will administer ORS when their children have diarrhea.
4. 60% and 70% of mothers of children O-23 months will know the signs of dehydration:)
5. 45 % and 70% of children O-l 1 months will be weighed every 2 months and children 12-35 months will be weighed every 4 months.
6. 90% of children O-35 months who attend growth monitoring sessions will have a weight-age greater than that which is two standard deviations below the mean.*
7. 15% and 25% of mothers will exclusively breastfeed their children until the fourth month.
8. 60% and 70% of mothers of children under 5 will know to introduce appropriate weaning foods from the fourth to sixth month.

9. 80% and 70% of children 6-59 months will receive a 200,000 IU dose of vitamin A twice annually.

10. 60% and 70% of mothers of children 6-59 months will know to give vitamin A rich foods to their children.

11. 90% of mothers who attend growth monitoring sessions will receive 200,000 IU of vitamin A during the first 2 months post-partum.

12. 65 % and 75% of mothers of children O-23 months will be able to recognize rapid breathing as a sign of ALRI.

13. 50% and 75 % of pregnant women will receive their first prenatal care visit in the first trimester of pregnancy.

14. 60% and 45% of women 15-49 will use a modern method of family planning.

15. 65% and 85% of mothers of children under 5 will use at least one of these 3 methods of malaria prevention (bed-nets, water collection drainage or malaria prophylaxis).

16. 28 health promoters in M6/TPT and 11 health promoters in RSJ trained.

17. 336 brigadistas in M6/TPT and 132 brigadistas in RSJ trained.

18. 336 CHCs in M6/TPT and 132 CHCs in RSJ trained.

Baseline data was used to set the above objectives, define the target populations, and determine which interventions will be given the greatest focus and strategies to be used.

D.3 The WRN CS project focuses primarily on educating mothers and fertile aged women 15-49 to increase their knowledge and change their behaviors in the areas of immunizations, home management of diarrhea, breastfeeding, weaning, vitamin A, acute lower respiratory infections, maternal nutrition, prenatal care, birthspacing and malaria in order to decrease morbidity and mortality of children under five. Health volunteers (brigadistas) and CHC members (including representatives of each block of ten homes) are trained to extend MINSA CS initiatives to the population. Each of 8 interventions will be phased in monthly for 8 months and the number of families covered will increase each year until the whole population is covered. The project was designed in this manner so that the current MINSA structure which utilizes brigadistas could be strengthened and so that sustainability could be attained.

The WRN CS project includes several innovative approaches such as the use of community banks to help women increase income in urban CSP areas (funding is currently being sought), the implementation of a parallel USAID Mission funded agricultural project which increases the income of the husbands of many of the women in the area of RSJ, home

gardening projects, food demonstrations, the transportation of MINSA immunization workers to EPI sites, and pregnant women's clubs.

D.4 Project monitoring will be accomplished through a family registration system and through randomized 30-cluster knowledge and practice (K&P) surveys used as a baseline and for a final evaluation to measure project progress on objectives. Eligible women and children will be enrolled using a census when the program is phased into each region, and updated at the beginning of each year. New births and deaths will be updated monthly and recorded the household register. The data from the household register will be given to the health promoter, who gives it to the area coordinator who keeps this data in a master register at the area office. This data will be reported on a quarterly basis to WRC staff who regularly discuss implications of the data with the field staff. The mid-term evaluation and final evaluation will be held during Year 2 and at the end of the project respectively. Findings are discussed together with the CSP staff who provide input into the recommendations. The evaluation document is written by the external evaluator. Results and recommendations are discussed with staff, including the brigadistas, in the process of making changes in the project design.

Section D.5a - DIP for Immunization (EPI)

5a. 1 The immunization coverages from the baseline surveys are listed in Table 1:

Table 1: Immunization Coverages for Children 12 to 23 Months (in percentages)

	Managua	Tipitapa	Rio San Juan
DPTl	76.8	42.7	67.3
OPV3	67.9	28.2	54.8
Measles	63.4	35.9	50.0
Fullv immunized	51.8	13.6	37.5
Dropout rate	19.7	38.6	21.4

Percent of births fully protected by TT immunization were 25.3% in M6, 22.4% in TPT and 11.2% in RSJ.

MINSA defines completely immunized as "all persons who have sufficient specific antibodies to avoid a disease after contact with the causative pathogen agent".' A completely immunized child must have 1 dose of BCG, 3 doses of DPT, 3 doses of OPV and 1 dose of measles.

5a.2 A high immunization drop out rate in all 3 regions indicates that mothers do not understand the importance of completing the immunization schedule. The baseline surveys reveal that a majority of mothers did not know when a child should receive the measles vaccine. Percentages of mothers who knew that a child should receive measles vaccine at 9 months was low (M6, 49.4%; TPT, 39.7%, RSJ, 17.8%). In TPT and RSJ the percentages were even lower at 39.7% and 17.8% respectively. Regarding immunization cards, in M6 12.7% of women indicated that they had lost their child's immunization card, while in TPT 20.7% had lost the card and 17.1% had lost the card in RSJ. The percentage of children who never had a card indicates the percent that never received any of the EPI vaccinations was 8.9% in M6, 21.5% in TPT and 10.5% in RSJ.

5a.3 MINSA EPI policy recommends that all children receive vaccinations according to the following schedule:

BCG:	One dose immediately after birth.
DPT:	Three doses, the first at four weeks and each consecutive dose at 6-8 weeks following the previous dose.
OPV:	Five doses, the first at four weeks and each consecutive dose at 6-8 weeks following the previous dose.
Measles:	One dose at nine months.

Although MINSA recommends 5 doses of OPV, only 3 are required for complete immunization. Thus, 5 visits are required for a child to reach full coverage by 12 months of age. The number of newborns each year is estimated at 8,526 in Year 1, 8,876 in Year 2 and 9,240 in Year 3.[10]

Three strategies are used by MINSA to provide EPI services:

1. Immunizations are available on a daily basis at the health centers.
2. Mobile teams bring EPI services to health posts 3 times a year for more distant populations.
3. During an epidemic, immunizations are given in mass campaigns from house-to-house in the community affected by the epidemic.

MINSA criteria for high risk in this intervention according to Dr. Chavez (Director, SILAIS Oriental) are the following: 1) malnourished children, 2) children with incomplete immunization schedules, 3) children under 2 years of age, and 4) children of uneducated women.

5a.4 Project Objectives for Immunization are shown below in Tables 2 and 3:

Table 2: Numbers & Percentages of Children 12-23 Months Completely Immunized

	Year1	Year2	Year3
Managua/Tipitapa	594 (55%)	2,629 (65 %)	3,782 (70%)
Rio San Juan	396 (45%)	969 (52%)	1,366 (60%)

Table 3: Numbers & Percentages of Women 15-49 Immunized with 2 Doses of TT

	Year1	Year2	Year3
Managua/Tipitapa	5,120 (60%)	20,721 (65 %)	26,717 (70%)
Rio San Juan	2.009 (50%)	4.681 (55 %)	6,241 (60%)

5a.5 The CSP's primary immunization strategy is-then social mobilization through extensive education to mothers in support of immunization and to create a "social climate" for acceptance of the MINSA immunization program. The project will not deliver EPI services, but will assist the MINSA EPI program in the following manner:

1. Help MINSA to identify communities with low immunization coverages through the CSP network of volunteers and the household registration system.
2. Educate groups of women on the necessity of vaccination and refer them to sites where they may receive these immunizations.
3. Transport MINSA EPI workers to distant health posts during campaigns, or to regions where a large number of children with incomplete immunization schedules have been identified.
4. Assist MINSA with their cold chain in RSJ through placing 8 refrigerators in health posts which are a great distance from the nearest health center. These refrigerators will be checked every 3 months by CSP promoters to assure proper use and a well-maintained cold chain.

Project beneficiaries living close to MINSA health centers will be able to receive immunizations all year long at these fixed sites. However, those who live a distance from these sites have accessibility to EPI during campaigns held at the health posts 3 times each year, through mobile facilities during epidemics, or when the CSP transports MINSA workers to high risk communities.

Project inputs will include the transport of MINSA workers, the purchase of 8 refrigerators, development of educational materials and staff time. The expected outcomes are that mothers knowledge of the need for immunizations will increase, her access to immunization will increase and the objectives listed in Section 5a.4 will be met.

5a.6 Dr. Albert0 Araica, CSP Director, Rachel Hogue, CSP Health Adviser, and the area coordinators for M6, TPT and RSJ will be responsible for technical oversight of the immunization component and quarterly monitoring of the progress in immunizing the eligibles. Job descriptions and resumes are included in Appendix D.

5a.7 The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the community health committees (CHC's) in immunization promotion. Training will begin April, 1993 and will focus on childhood immunopreventable diseases and their effects, immunizations (number and timing of doses), and information on EPI sites, how to identify defaulters and how to motivate mothers to attend EPI sessions.

Health promoters will receive 5 days (40 hours) of initial immunization training. Refresher training is held 2 days each month on various interventions which will amount to 3 days (24 hours) over a year. Brigadistas receive 2 days (16 hours) of initial training and approximately 3 days (24 hours) of refresher training over a year's period. CHC members (including block representatives) will receive CS training on 1 intervention each month for a half day or 4 hours of training in immunization.

The immunization training component will be evaluated through instructional games which test knowledge at the end of each training session. Area coordinators will complete supervisory checklists during training sessions given by health promoters. Health promoters will do the same for training given by the brigadistas. In order to transfer lessons learned into training, management staff will discuss possible changes in the training after each session. Focus groups will also be used annually to assess change in mothers' knowledge. Finally, the K & P Survey will assess changes in mothers' knowledge and practice at the end of the project.

5a.8 See Appendix E for the immunization card used in M6 and RSJ. In TPT, MINSA has coordinated their maternal and child health interventions with CLAP (Centro Latino Americana Perinatologia, an NGO), and is using the CLAP card to register immunizations (also attached in Appendix E.) This card will also be used in TPT by the CSP.

At each immunization session or during home visits, a copy of each child's immunization card will be made and kept in the brigadista's file. In the case that a child's card is lost, the brigadistas will fill out another card for the child. Mothers will also be educated by the CSP on the importance of retaining the immunization cards. Immunizations will be tracked in the HIS. During mass campaigns, the brigadista will go with the MINSA EPI worker to each house and help him/her fill out the cards. At that time, copies of the cards will also be

completed for the file and immunizations recorded in the household registry system. Since MINSA provides all immunization cards, no expenditures are reflected in the budget.

5a.9 Defaulters will be identified by block representatives (each responsible for 10 neighbor families) who will check the children's immunization cards and report monthly to the brigadista on the children or women whose immunization schedule is incomplete. During the home visit the block representative will counsel the mother to take her child in for necessary immunizations. When a large number of children in the brigadista's community are found to have incomplete immunization cards, she and the health promoter will coordinate with the CSP area coordinator and MINSA to set a date when the CSP will transport EPI workers to that community to immunize the children identified. Other strategies which will be used to decrease dropouts and missed opportunities include:

1. Administering immunizations to children at growth monitoring sessions.
2. Educating MINSA EPI workers to check a child's immunization schedule when they come to the health center or health post for other reasons and immunize those who are due for immunization. Where the brigadistas attend growth monitoring sessions at the health posts they will check immunization cards and encourage MINSA workers to do the same.
3. Transport MINSA EPI workers to distant or high risk communities, or to communities where a large number of children have incomplete immunization schedules.

5a. 10 To decrease missed opportunities and increase the coverage levels of TT in women from 15-49, a monthly educational session will be held on the importance of TT. TT will be administered during educational sessions which are held at the health posts for women who need it. Also during house-to-house immunization campaigns, women and children will both be immunized. Also, the CSP staff will coordinate with "occupational physicians" who take care of all factory workers' medical needs to give TT to their female workers.

5a. 11 Weak links identified through project staff visits to health centers and immunization sessions which exist in the MINSA cold chain include the following:

1. Lack of sufficient equipment such as refrigerators in rural areas.
2. Lack of control over refrigerators and thermoses. For instance, refrigerators may be used to store other supplies and are opened more frequently than they should be. Also, many times thermoses are left open during immunization sessions.
3. Inadequate monitoring of refrigerator temperatures in some health centers.
4. Lack of proper maintenance of equipment (much of the equipment is very old).
5. Frequent electricity blackouts.

The CSP project will not be able to address all of these shortcomings since this is primarily an educational program. The CSP will focus primarily on placing 8 refrigerators in distant communities in RSJ and monitoring refrigerator temperatures in those health centers. The area coordinator will make a quarterly temperature check at each of those health centers.

5a.12 Since immunization coverages are very low in the CSP project regions, the focus of the CSP will be to increase coverages. At this point it is not feasible to conduct EPI disease surveillance, as a higher coverage is needed before surveillance would enable the program to measure its effectiveness. It would also require additional training for the brigadistas who will be trained during the first three years of the project in 8 interventions. Once coverages are increased, the CSP will introduce measles surveillance during the expansion phase of the project.

Section D.5b - Diarrhea1 Disease Control (CDD)

5b.l The baseline survey conducted in February, 1993 shows a prevalence of diarrhea in the last two weeks of 14.8% in M6 and 21.1% in TPT. Had the survey been taken during the rainy season, these percentages would probably have been quite a bit higher. The baseline survey in RSJ in October, 1992 during the rainy season revealed a prevalence of 26.4%. According to Dr. Chavez, SILAIS Oriental Director, each child has an average of 3 episodes of diarrhea per year with an average duration of 3-5 days.

5b.2 The current levels of knowledge and practice revealed by baseline survey data of mothers in the CS project areas are shown below in Tables 4 and 5.

Table 4: Percent of Mothers Surveyed who have Knowledge of Fluid Replacement and Dietary Management of Diarrhea

	Managua	Tipitapa	Rio San Juan
Knows signs/symptoms of dehydration	15.6	10.1	17.1
Knows to initiate fluids rapidly	12.7	9.3	15.9
Knows to give more fluids than usual	1.7	1.3	1.6
Knows to prepare and administer ORS	73.8	68.4	42.6
Knows to give child smaller, more frequent feeds	3.0	1.3	1.6
Knows to give child smaller, more frequent feeds during recuperation from diarrhea	16.5	22.4	41.1
Knows to give child foods with high caloric content when recuperating from diarrhea	1.7	0.4	3.1

Very few mothers responded that foods or fluids should be withdrawn. However, the table above does show that except for knowledge of ORS, mothers have very little knowledge about correct therapy for diarrhea.

Table 5: Practices in Percentages of Mothers of Children O-23 Months with Diarrhea in the Last Two Weeks

	Managua	Tipitapa	Rio San Juan
Give breastmilk to child in amount equal or more than usual	57.0	42.0	57.3
Give equal or greater amounts of liquids than usual	77.0	62.0	51.5
Administer ORS	37.1	46.0	27.9
Give foods in greater or equal quantity	54.3	38.0	27.9
Give antibiotics or antidiarrheals	65.7	80.0	38.2
Go to hospital or health center for treatment	42.9	22.0	35.3
Go to health volunteer (brigadista)	0.0	0.0	5.9

In the project area there is a high use of antibiotics/antidiarrheals in the treatment of diarrhea. The project will need to focus on discouraging the use of these medicines, while encouraging the use of ORS, home fluids and feeding during and after diarrhea. In addition, much needs to be done to encourage women to go to the brigadistas for counsel during a child's episode of diarrhea. Very few mothers in the CSP regions used cereal-based fluids during diarrhea. Since atoles (cereal based gruels) are common in the culture, and provide appropriate semisolid foods for children, they will be promoted by the brigadistas for use during diarrhea.

5b.3 MINSA protocol/recommendations for case management of diarrhea1 diseases" is as follows:

1. Do not suspend breastfeeding.
2. Administer fluids prepared hygienically in greater quantities than usual.
3. Feed a child with diarrhea small amounts of food more frequently.
4. Explain and demonstrate the signs of dehydration to mothers.

5. Teach mothers how to prepare and administer ORS.
6. Do not administer medicines or laxatives to a child suffering from diarrhea.
7. If the child has high fever, bloody stools, or a bloated or extended abdomen, take him to the nearest hospital or health center.
8. Continue feeding child during and after diarrheal episodes.
9. Teach mothers about prevention of diarrheal diseases.

5b.4 Project Objectives for Diarrhea Control are shown in Tables 6 and 7 below:

Table 6: Mothers of Children O-23 Months who Administer ORS When their Children have Diarrhea

	Year1	Year2	Year3
Managua/Tipitapa	1,123 (50%)	5,043 (60%)	7,296 (65 %)
Rio San Juan	534 (30%)	1,507 (40%)	2,303 (50%)

Table 7: Mothers of Children O-23 Months Who Know the Signs of Dehydration

	Year1	Year2	Year3
Managua/Tipitapa	898 (40%)	4,203 (50%)	6,734 (60%)
Rio San Juan	623 (35%)	2,072 (55 %)	3,224 (70%)

5b.5 The beneficiary population for the CSP CDD component includes children O-23 months. The total beneficiary population for this intervention is 15,849. The approximate number of home visits required to reach the desired level of coverage of ORT knowledge and use is 4/year. The MINSA definition of high risk for diarrheal disease includes the following:

1. Child under 2 years of age.
2. Poor.
3. Malnourished.
4. Child of a single mother.
5. Lack of potable water or sanitation in home.
6. Child of weaning age.
7. Child under 2 years of age with a pregnant mother.

5b.6 The project strategy for CDD will closely follow the MINSA policy outlined in section 5b.3.

In light of the recommendations of MINSA, the CSP will promote commercially produced ORS as a first line defense against dehydration along with continued breastfeeding, early initiation and increased quantity of fluids, continued feeding during diarrhea and increased feeding the week after diarrhea. The brigadistas will especially promote the use of atoles (cereal-based gruels) which are used widely throughout Central America, but have not yet been promoted in Nicaragua for the dietary management of diarrhea1 disease. This falls in line with current research which shows that cereal-based ORT decreases the duration and volume of diarrhea caused by cholera and may help a child with any type of diarrhea recover nutritionally.[12 13 14 15 16]

Mothers will be taught 3 signs of dehydration (dry mouth, sunken eyes and decreased urination) so that they will know when to seek the advice of the brigadista or take their children to the nearest health post. Mothers will also be taught other preventive measures such as use of clean water, latrines, and washing hands before food preparation, eating and after defecation.

5b.7 The CSP area coordinators have much time at the health centers observing services provided by MINSA, as well as conversing with doctors and nurses in health centers and health posts. The area coordinators and MINSA staff agree that there is an adequate supply of ORS. Occasionally the supply in some health posts may be past the expiration date. For these cases, WRN has budgeted for an emergency supply of ORS. Beneficiaries may obtain free ORS from the brigadista in their community at the base house (l/community).

5b.8 The project will promote the use of home available fluids such as coconut milk or juices, as well as cereal-based ORT. The project will especially promote the use of atoles, which are easy to prepare, available and commonly used by the people. Most women in Nicaragua know how to prepare atoles. They are thought to aid in recovery from several other diseases, but have not been used or promoted in the past for the management of diarrhea. The baseline survey shows this to be true in the project area. In M6 only 2.9% of mothers gave their children atoles during diarrhea and in Tipitapa none of the mothers gave their children atoles during diarrhea.

Ingredients for each of the atoles are shown below:

1. Atole de Arroz: Water, rice and sugar.
2. Atole de Maicena: Water, corn flour and sugar and occasionally cinnamon for flavor.
3. Atole de Cebada: Water, milled wheat and sugar.
4. Pinol: Water, roasted milled corn and sugar.
5. Pinolillo: Water, roasted milled corn, sugar and cocoa.

5b.9 Since the CSP's main focus is to educate brigadistas and through them to educate village women, MINSA brigadistas will be trained. The CSP will not assess the treatment of diarrheal cases at the health facility but will focus on training village women how to prevent dehydration and to know the signs of dehydration so that she will know when to bring her child to the health facility.

5b. 10 With regard to administration of ORS, mothers will be taught the following: 1) Was1 hands; 2) Use 1 liter of the cleanest water available to prepare 1 packet of ORS; 3) Mix thoroughly and administer with cup and spoon; 4) Begin administration of ORS in small amounts when the diarrhea begins, approximating the volume of stool for each defecation; and 5) Discard remaining ORS after 6 hours.

Participatory educational methods will be used to communicate these messages to mothers such as role plays, stories, games, drama, slides, posters, group reflections and practical demonstrations. Mothers will be taught these messages at monthly group meetings and during home visits made by the brigadista when a child has diarrhea. In both group meetings and home visits the brigadista will demonstrate proper preparation of ORS. In addition, health messages will be shared and ORS demonstrated at growth monitoring sessions.

Educational materials to be used will be adapted from the Project Hope Honduras CS project by Project Hope Nicaragua and World Relief Nicaragua for use in Nicaragua. Costs for educational materials are reflected in the budget attached in Appendix F.

Mothers knowledge of the dietary management of diarrhea will be measured by question and answer games at the end of each educational session and the final evaluation K&P survey.

5b. 11 Other strategies promoted by the CSP for CDD include hand washing with soap before preparing food, eating and after defecation, and washing foods before food preparation. There are no additional costs associated with the transmittal of these educational messages.

5b. 12 Dr. Alberto Araica, CSP Director, Rachel Hogue, Health Adviser, and the area coordinators for M6, TPT and RSJ will be responsible for technical oversight of the CDD component. Job descriptions and resumes are included in Appendix D. The health promoters will be responsible to monitor the mothers' knowledge of correct ORT by visiting 2 mothers of children who have diarrhea on a bimonthly basis and filling out a checklist on proper use.

The area coordinators along with Aminta Fen-u&o, Health Education Specialist, will supervise the quality of the training given by the health promoters to the brigadistas regarding home management of diarrheal disease. Likewise, the health promoters will supervise the quality of training given by the brigadistas to the mothers. See Appendix D for the job description and resume of the Health Education Specialist.

5b.13 The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the CHCs. Brigadista training will begin June, 1993 and will focus on the signs of dehydration, preparation and use of ORS, continued breastfeeding, early initiation and increased use of fluids, continued feeding during diarrhea and increased feeding the week after diarrhea.

Health promoters will receive 5 days (40 hours) of initial CDD training. Refresher training is held 2 days each month on various interventions. Over a year this would amount to approximately 3 days (24 hours) of refresher training in CDD. Brigadistas receive 2 days (16 hours) of initial training and approximately 3 days (24 hours) over a years period of refresher training. CHC members (including block representatives) will receive CS training on one intervention each month for a half day. This will amount to 4 hours of training in CDD.

The CDD training component will be evaluated through games which will test if knowledge has been adequately transmitted and absorbed by mothers at the end of each training session, and through supervisory checklists that will be filled out by area coordinators during training sessions given by health promoters. Likewise health promoters will fill out checklists during training given by the brigadistas. In order to make sure that lessons learned are transferred into the training component, project management staff will discuss changes that should be made to improve training after each session that they attend. Focus groups will also be used annually to see what the mothers are learning and where they need further help.

5b.14 Health promoters will visit 2 mothers of children with diarrhea every 2 months and fill out a checklist to evaluate the quality of training of village mothers on how to measure and administer ORS. Question and answer games will also be used to test the mothers' knowledge. Supervisory checklists will be filled out by the health promoters during the educational sessions to make sure the brigadistas have adequately covered all health messages and have used all participatory techniques such as ORS preparation demonstrations.

Section D.5c - DIP for Nutritional Improvement

5c.1 The most up-to-date estimates for number and percent of children malnourished in the CSP areas are as follows: In SILAIS Oriental Region III which includes M6 and TPT, 15.3% of the children were malnourished in 1986." In RSJ, the 1986 figure for malnutrition in children was 16%'" The national figure for moderate to severe malnutrition as measured by weight-age is 11% for children under 5 and stunting was 22% in children 24-59 months."

The CSP will measure weight-age on a bimonthly basis for children O-l 1 months and on a quarterly basis for children 12-35 months. Malnourished children will be defined as those who are two standard deviations below the mean of the WHO standard according to MINSA policy.

CSP staff expects that malnutrition rates do vary according to the season. During harvest time more food is available and is less expensive. Harvest time in the M6/TPT region is during June - November, while in RSJ it is December - May. Thus, food is less available and more costly during December - May in M6/TPT and June - November in RSJ, at which time the CSP staff expects to see higher rates of malnutrition.

5c.2 A great variety of foods are available in the markets in all 3 project regions. However, the effects of drought during the past 5 years, slash and bum farming, deforestation, the war and political instability has greatly decreased food production. Low tariffs on imported foods have also influenced food production by making it difficult for Nicaraguan farmers to compete with other countries. Thus, most of the food sold in Nicaragua is imported and expensive. Consequently, many families **cannot afford most foods** available in the markets. The fact that many women in Nicaragua are single mothers also makes it very difficult for them to feed their families, as they must work while raising children, many have low paying jobs. Food security in recent years has been almost nonexistent as there are currently no laws governing street vendors.

5c.3 Baseline survey data revealed that breastfecding levels were low in all 3 project areas. The K&P surveys revealed that only 50% of mothers (of children O-23 months) in M6, 52% of mothers in TPT and 59% of mothers in RSJ were breastfeeding their children. Approximately 80% of mothers introduced fluids other than breastmilk in all 3 regions before 4 months of age and more than 65% gave their children sugar or honey in all 3 areas. Although most mothers began breastfeeding in the first 8 hours after birth (M6, 67%; TPT, 64%; RSJ, 61%), the levels of exclusive breastfeeding before 4 months was extremely low at 2% in M6 and TPT and 12% in RSJ. Most mothers introduced solid/semisolid weaning foods (especially fruits, semisolid foods such as atoles, eggs and cheese and beans) at 4-6 months of age. However, mothers knowledge of when to begin introducing weaning foods was low at 22 % in M6, 24% in TPT and 28 % in RSJ. (For more detailed information see baseline surveys for M6, TPT and RSJ).

CSP staff held discussions in all 3 areas with doctors and nurses at the health centers/health posts regarding the cultural beliefs pertaining to breastfeeding and weaning. Some common beliefs mentioned are listed below:

Beliefs regarding colostrum:

1. Some women believe that colostrum is like water and doesn't contain any nutrients for the child. Thus, they throw it out and give the foods they believe will help the child grow. This is especially true in RSJ and not as common in the other CSP areas.
2. Some women believe that colostrum is dirty since it has accumulated throughout pregnancy. Thus, throw this "dirty milk" out and wait for the real milk, while giving the child sugar water, bottlemilk or other fluids. This is especially true in RSJ and not as common in the other CSP areas.
3. Most women believe that colostrum prevents or heals conjunctivitis. Thus, it is placed in the infants eyes at birth. This is a common belief in all CSP areas.

Beliefs regarding breastfeeding in general:

1. Breastfeeding ruins a woman's figure (a belief more common in urban areas of M6 and TPT).
2. Breastmilk is not sufficient food for the child and other foods are needed.

3. Some foods which the mother eats (especially onions and beans) goes into the breastmilk and makes the baby sick.
4. Breastmilk should be suspended when the mother is ill, since it will make the child sick.
5. When the mother is agitated she should put salt on her nipple to cool her milk down.
6. A frightened mother should not breastfeed. She will give her child diarrhea.
7. When mother becomes pregnant again she should stop breastfeeding her other child, since this new milk is for her new child.
8. If the mother has inverted nipples, she cannot breastfeed.
9. If the mother has small breasts, she will not have enough milk for the child.

Another common practice of lactating women, especially in rural areas, is that during the first 40 days after the birth of a child a woman should only eat tortillas, cheese and pinol (a corn-based gruel). Other foods are commonly avoided because they are believed to give the mother or child health problems. This could effect the mother's nutritional status negatively.

5c.4 The beneficiary population for nutrition interventions includes children under 5 (estimated population = 37,507) and women 15-49 (estimated population = 53,030). Mothers' educational groups will be held by each brigadista once each month for groups of approximately **30** mothers (that is 2 groups per community). The number of mother contacts by the brigadista will be once each month (12 visits/year). High risk children will be followed-up more often--once each week. The brigadista will visit the mother in the first week with the block representative who will then follow-up on a weekly basis until the child's nutritional status improves.

During a census taken when the brigadista begins working in a community, each family will be enrolled into the household register that the brigadista will keep. High risk families will be highlighted in this register for continual follow-up by the brigadista.

High risk for nutrition will be determined by the following criteria:

1. A child 2 standard deviations or more below the mean for weight-age.
2. A child who has not gained weight in the last growth monitoring period.
3. A child suffering from diarrhea or ALRI.
4. A child under 1 year of age whose mother is pregnant.

5c.5 Project Objectives for Nutrition are shown in Tables 8 and 9 below:

Table 8: Mothers who Exclusively Breastfeed until an Infant's Fourth Month

	Year1	Year2	Year3
Managua/Tipitapa	58 (5%)	436 (10%)	873 (15%)
Rio San Juan	135 (15%)	381 (20%)	582 (25%)

Table 9: Mothers of Children under 5 who Know to Introduce Appropriate Weaning Foods from the Fourth to Sixth Month

	Year 1	Year 2	Year3
Managua/Tipitapa	2,111 (40%)	9,886 (50%)	15,846 (60%)
Rio San Juan	1,491 (35%)	4,959 (55 %)	7,715 (70%)

5c.6 The project strategy for improving the nutritional status of children O-23 months will include growth monitoring, nutritional counseling of mothers with food demonstrations, vitamin A supplementation and education, promotion of home gardens and group educational meetings. Group meetings will educate mothers on breastfeeding, complementary foods (weaning foods) and vitamin A rich foods.

Project inputs include provision of scales for growth monitoring sessions, education materials and salaries for project staff. Outputs expected in the 3 years of project include a change in the knowledge and practice regarding infant feeding and complementary foods as stated in the objectives in section 5c.5 above.

Nutrition activities will be phased into the regions starting with MINSA's highest priority communities in year 1. All project areas will be covered by year 3. During year 1, at total of 8,568 families will be enrolled in the project. During year 2, a total of 27,372 families will be enrolled and by the end of year 3 all families (a total of 35,844) should be covered.

Constraints on attempts to improve children's nutrition include:

1. The high cost of food in the markets.
2. The poverty in which many live making it difficult to purchase these foods.
3. Mothers beliefs that children should be given supplemental foods earlier than 4 months.
4. The practice of throwing out colostrum, because of the belief that it is bad for the child.
5. Early bottle feeding.

In order to overcome these constraints, mothers will be educated on the importance of exclusive breastfeeding during the first 4 months of life and will be taught to add foods at 4 to 6 months. The benefits of colostrum will also be discussed, as well as reasons why bottle feeding should be avoided. Several strategies will be used to overcome the difficulty mothers have in purchasing foods for their families. First, the promotion of home gardens in RSJ and possibly in TPT if funds are secured for nutrition promoters who will educate women to grow home gardens. Along with this, an agricultural project in the CS project area of RSJ will assist womens' husbands work in cooperatives and learn farming methods which will increase their yield and enrich the soil. This will assure higher incomes and more capacity to buy food for their families.

In the urban areas of M6 and TPT, WRC is seeking funding to implement a community banking project. Project loans will be given to women enrolled in the CS Project who have need and meet the criteria. These loans will enable them to start small businesses to increase their income so that they will be able to purchase nutritious foods for their children.

5c.7 Since the project will not be responsible for education of MINSA health staff or TBAs with regard to delivering babies, the CSP will not be able to weigh babies at birth. Follow-up on low birth weight babies will be the responsibility of MINSA.

5c.8 To improve the nutritional status of pregnant and lactating women the CS Project will focus on improving women's dietary habits, referring pregnant women to the health centers for vitamins, iron and folic acid supplements, and giving women vitamin A supplements within 2 months postpartum. Pregnant and lactating women will be instructed to eat greater quantities of food (2 extra meals/day), and foods rich in calories, protein and iron such as eggs, fish, liver and green leafy vegetables. Food demonstrations will show women how to prepare these foods. In addition, the agricultural project, home gardening project and community banking project (for which funding is being sought) in the CSP area will enable these women to have more money to purchase nutritious foods for themselves as described above in section 5c.6.

In addition to the economic constraints mentioned earlier, many women in Nicaragua believe that the first 40 days after a child is born women should only eat tortillas, pinol and cheese, a custom especially common in rural areas. To overcome this constraint, group discussions, case studies, songs, food demonstrations, skits and other participative educational techniques will help women see that many foods are good to eat after a delivery and that more food will increase her milk supply and help her baby grow.

5c.9 Being that this CS project is an educational project, no supplementary foods will be provided. However, malnourished children will be referred to the INSSBI (Instituto National de Seguridad y Bienestar Social) and SOYNICA (Soya Nicaraguense) supplementary feeding centers for free lunches where they exist in M6 and TPT. Malnourished children in RSJ will be referred to CEPAD (Comite Evangelic0 Pro Ayuda al Desarollo) centers where they exist. In addition, promotion of kitchen gardens in rural areas

and a community banking project (for which funding is being sought) in urban areas will enable families to produce or buy foods for themselves rather than becoming dependent on supplemental feeding programs. Food preparation demonstrations will be given to the women by other women enrolled in the project who know how to prepare foods that are acceptable in Nicaragua using nutrient rich foods grown in the kitchen gardens or that are available in the markets for low cost, but underutilized. These strategies will increase the sustainability of the project and at the same time improve the nutritional status of the target population.

5c10 Dr. Albert0 Araica, the CSP Director, Rachel Hogue, CSP Health Adviser, and the CSP Area Coordinators will be responsible for the technical oversight of the nutrition component. The Area Coordinator for M6 is Dr. Jairo Campos, for TPT is Dr. Zorayda Gomez and for RSJ is Juanita Schoeneich de Escorcia. Job descriptions and resumes are attached in Appendix D.

5c11 Messages which will be communicated to mothers to improve practices influencing their own nutritional status and to promote healthy growth of their children include:

1. Continue breastfeeding through a child's second year of life.
2. Breastmilk alone is the best food and drink for a baby in the first 4-6 months of life.
3. Other foods should be added to breastmilk between the ages of 4-6 months.
4. Children under 3 years need to be fed 5-6 times each day.
5. Give your child an extra amount of fat or oil along with the family food.
6. Children O-l 1 months should be weighed every month and children 12-35 months should be weighed every 3 months.
7. Children 6-59 months should receive a dose of vitamin A every 6 months.
8. Children 6-59 months need foods rich in vitamin A to prevent night blindness, respiratory infections and diarrhea.
9. Add yellow or orange fruits and vegetables, and green leafy vegetables to your child's food.
10. A mother should receive a dose of vitamin A within the first 2 months after the birth of her child.

Participatory methods such as food demonstrations, drama, stories, group discussions and games
will be used to educate mothers in nutrition. CSP staff will also make use of flip charts and posters provided by MINSA or other non-profit organizations.

Vitamin A Prevention

5c12 There are no recent studies of vitamin A deficiency for the CSP project area. However, a 1966 study in Nicaragua reported that 19.8% of children under 5 years old had serum retinol levels of less than 20 μ/dl. At this level, vitamin A deficiency is considered a public health problem". Another study of pregnant women conducted in 1989 in Region IV (South-Pacific) indicated that 17% had low serum retinol levels". Given current levels of

malnutrition in CSP areas, we can assume a high percent of the target population also have low levels of vitamin A.

Discussion with Dr. Aida Castilblanco, a pediatrician at Fernando Velez Paiz Hospital and Verbo Clinic indicates that xerophthalmia is common in children under 5 in Nicaragua. Dr. Castilblanco stated that she sees many cases of xerophthalmia in children under 5 which she believes is directly related to vitamin A deficiency. She also stated that many of the children she sees have advanced cases of xerophthalmia and permanently lose their vision. She felt that a vitamin A distribution/education program was desperately needed in the CSP areas.

5c13 Vitamin A rich foods are not widely accessible to the CSP beneficiaries. In M6 and TPT they are available in the markets, but are very expensive. In RSJ they are not available in many markets, as these foods are not cultivated in the region. Vitamin A rich foods that are the most available and least expensive include mangoes, eggs, squash and green leafy vegetables. However, mothers generally think of squash or green leafy vegetables as food for animals, not humans.

The baseline surveys show knowledge of vitamin A and vitamin A rich foods to be very low in all 3 areas. Knowledge that vitamin A prevents night blindness was only 6% in M6, 5% in TPT and 6% in RSJ. A high percentage of the mothers did not know even 1 food rich in vitamin A (M6, 79 % ; TPT, 78 % ; RSJ, 70%) which means that less than 30% of all mothers in the project area knew at least 1 vitamin A rich food that prevents night blindness. Less than 2% of all of the mothers knew that breastmilk is rich in vitamin A.

Mothers surveyed who feed their children vitamin A rich foods are shown in Table 10 below :

Table 10: Percent of Mothers of Children 0 - 23 Months who Give Vitamin A Rich Foods to their Children

	Managua	Tipitapa	Rio San Juan
Yellow fruits or vegetables	78	63	46
Green leafy vegetables	3	3	5
Dairy products (eggs, cheese, cream)	72	71	67
Meats/Fish	60	57	57

It is not known how regularly these foods are given to children. It is also apparent that except for green leafy vegetables, the other vitamin A rich foods are acceptable to the population and will be strongly promoted by the CSP.

5c14 MINSA currently does not have a vitamin A program. Consequently, there is no MINSA protocol for vitamin A supplementation. The CSP will follow guidelines outlined in ***A Field Guide for Adding Vitamin A Interventions to PVO Child Survival Projects, 1988,*** edited by Doris Storms and John Quinley.

The beneficiary population includes children 6-59 months (estimated population = 33,412) and post-par-turn women (estimated population = 8,190). In order to reach full coverage of children 6-59 months, 2 visits must be made to the homes of those not attending the growth monitoring or immunization sessions. With regard to post-par-turn women, capsules will be given out to those women who attend the growth monitoring session with their child.

Brigadistas will enroll each family into the household register during a census taken when the brigadista begins to work in her community. High risk families will be highlighted in this register for continual follow-up by the brigadista.

5c15 Objectives for vitamin A interventions are shown in Tables 11, 12 and 13.

Table 11: Children 6-59 Months who Receive a 200,000 IU Dose of Vitamin A Twice Annually?

	Year1	Year2	Year3
Managua/Tipitapa	1,878 (40%)	10,555 (60%)	18,800 (80%)
Rio San Juan	2,095 (55%)	5,242 (65 %)	6,900 (70%)

† Based on 50% of population of children O-1 1 months and population of children 23-59 months.

Table 12: Mothers who Know to Give Vitamin A Rich Foods to their Children?

	Year 1	Year2	Year3
Managua/Tipitapa	1,878 (40%)	8,796 (50%)	14,100 (60%)
Rio San Juan	1,524 (40%)	4,435 (55%)	6,900 (70%)

† Based on 50% of population of children O-l 1 months and population of children 23-59 months.

Table 13: Mothers who Attend Growth Monitoring Sessions who Receive 200,000 IU Vitamin A During the First 2 Months Post-partum

	Year1	Year2	Year 3
Managua/Tipitapa	(70%)	(80%)	(90%)
Rio San Juan	(70%)	(80%)	(90%)

5c16 CSP strategies to promote vitamin A interventions include vitamin A supplementation, group educational meetings with food demonstrations and promotion of home gardening. Funds are currently being sought to start a community banking project in Year 2 for urban women involved in the CSP to increase their income so they will be better able to purchase vitamin A rich foods.

Vitamin A Supplementation:

Vitamin A supplements (200,000 IU) will be given to children 6-59 months every 6 months during immunization sessions which are held at the health posts 3 times annually and growth monitoring sessions which are held monthly. Children who have missed their 6 month dose of vitamin A will be followed up in their homes during mass campaigns which will be held twice annually. Post-partum women who attend the growth monitoring sessions will also receive a 200,000 IU dose of vitamin A during the first 2 months post-partum. Capsules for this project are being donated by Sight and Life. Funds for emergency supplies have also been budgeted.

Mother's Educational Group Meetings:

Educational meetings for mothers will be held each month in 2 sites in each community. During these meetings mothers will be taught about the effects of vitamin A deficiency, the importance of breastfeeding, which foods contain vitamin A and how to prepare vitamin A rich foods. In order to teach mothers how to prepare vitamin A rich foods, food preparation demonstrations will be given by the brigadistas or by mothers who know how to prepare these foods. In rural areas where women have home gardens, foods from these gardens will be used for the food preparation demonstrations. After the demonstration food has been prepared, mothers and children present will taste it. This will create a demand for home gardens promoted by the CSP, as well as knowledge and acceptance of vitamin A rich foods.

Home Gardening and Income Generation:

Two nutrition promoters funded by the USAID Mission agricultural grant for World Relief in RSJ will teach mothers involved in the CS project how to grow home gardens. These home gardens will include vitamin A rich foods such as papaya, carrots, squash, etc. Tools and

seeds for this project will also be provided by the USAID Mission agricultural grant. WRC is currently seeking funds to employ nutrition promoters for the rural areas of TPT as well.

In the crowded, urban areas of M6 and TPT where there is not sufficient land for home gardens. WRN is currently seeking funding to start a community banking project for women the CSP. Small loans will help these women begin their own small businesses. Money earned will enable them to buy the vitamin A rich foods they are taught about during group meetings. **A** similar community banking project implemented by WR Honduras will be sustainable after 2½ years. With a sustainable community banking project such as this functioning in the urban CSP areas, mothers can regularly provide nutritious, vitamin A rich foods to their children.

5c17 Dr. Albert0 Araica, the CSP Director, Rachel Hogue, CSP Health Adviser, and the CSP Area Coordinators will be responsible for the technical oversight of the vitamin A component. The Area Coordinator for M6 is Dr. Jairo Campos, for TPT is Dr. Zorayda Gomez and for RSJ is Juanita Schoeneich de Escorcia. Job descriptions and resumes are attached in Appendix D.

5c18 The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the CHCs for prevention of vitamin A deficiency. Training of health promoters will begin in April, 1993 and training of brigadistas will begin in May, 1993. Training will focus **on** administration of vitamin A supplements, effects of vitamin A deficiency, vitamin A rich foods and food preparation demonstrations.

Health promoters receive 3 days (24 hours) of initial training in vitamin A and refresher training for 2 days monthly. Annually this amounts to 3 days (24 hours) of refresher training in vitamin A. Brigadistas receive 1 day (8 hours) of initial training and approximately 3 days (24 hours) of refresher training each year. CHC members will receive CS training on 1 intervention each month for a half day (4 hours).

5c19 Since MINSA does not currently have a vitamin A supplementation program, they do not record vitamin A administration. Thus, CSP staff will write the date vitamin A was given to children on the growth chart in the column for the month given (See sample growth chart in Appendix E) and the date vitamin A was given to mothers post-partum on the maternal health card (See Appendix E). Vitamin A supplementation will be recorded in this same way during the annual mass campaigns. The brigadista will keep a duplicate copy of each child's growth chart and each mother's maternal card as a backup for any lost cards. The cards cost nothing since MINSA provides all growth charts and maternal care cards.

Growth Monitoring

5c20 The CSP will include a growth monitoring/counseling (GM/C) component where children O-11 months will be weighed every 2 months and children 12-35 months will be

weighed every 4 months. Although it is difficult to find accurate records of number and percent of children under 5 attending GM/C, the baseline surveys reveal the percentage of children under 2 who were weighed in the last 3 months (M6, 17%; TPT, 25%; RSJ, 49%).

5c21 Current growth monitoring (GM) practice is stated above in Section 5c.20. MINSA data shows a decline in mothers attending GM in the past 2 years. In 1991 in SILAIS Oriental (M6 and TPT) the number of children attending GM decreases by 4.4% since 1990[22]. According to MINSA staff in RSJ, a similar decline is taking place. During the baseline survey, as well as during MINSA GM sessions, CSP staff have observed that MINSA health center staff often do not graph the weights on the growth chart and rarely explain the child's growth curve to the mother. This may be 1 of the reasons for disinterest in GM. Of mothers surveyed who had previously had their child weighed at least once, a high percentage had lost their child's growth chart (M6, 38%; TPT, 16%; RSJ, 23%). This also shows that many mothers seem to lose interest in GM. No studies were found during DIP preparation that revealed what mothers believe about a child's growth.

5c22 The MINSA recommended number of growth monitoring visits per year is as follows":
O-11 months: 1 visit every 2 months (6 per year); 12-23 months: 1 visit every 4 months (3 per year); 24-59 months: 1 visit every 6 months (2 per year).

The CSP will use Salter hanging scales in RSJ and Detect0 hanging scales in M6 and TPT.

The project objective for growth monitoring is shown in the table.

Table 14: Children O-l 1 Months Weighed Every 2 Months and Children 12-35 Months Weighed Every 4 Months

	Year 1	Year 2	Year 3
Managua/Tipitapa	987 (30%)	4,929 (40%)	7,406 (45 %)
Rio San Juan	1,452 (55%)	3.632 (65%)	4.781 (70%)

5c23 The potential beneficiary population of children O-35 months for growth monitoring is 23,296. The number of visits per year to reach full coverage for children O-l 1 months is 6 and for children 12-23 months is 4.

High risk criteria for growth monitoring includes:
1. Children who are 2 standard deviations or more below the mean for weight-age.
2. Children who have not gained weight in the last growth monitoring period.

5c24 The CSP GM/C will include extending MINSA GM services to communities which currently have none and provision of nutrition counseling and referral to supplemental

feeding centers, or MINSA health facilities for deworming malnourished children. Food preparation demonstrations will be given during GM/C sessions. Mothers who live in rural areas will be included in the home gardening project described in Sections 5c.6 and 5c. 16 to improve the nutritional status of their children. The men in RSJ will be included in a WRC agriculture project which will also increase the income of the families in RSJ. Funds are currently being sought to include the poorest mothers in urban areas in a community banking project which will increase the family's income so that mothers will be able to provide nutritious foods for their children.

Growth monitoring activities will be phased into the regions starting with MINSA's highest priority communities in year 1 and by year 3 will cover all project areas. During year 1, at total of 8,568 families will be enrolled in the project. During year 2, a total of 27,372 families will be covered by the project and by the end of year 3 all families (a total of 35,844) should be covered.

The CSP will assist MINSA by training the MINSA brigadistas along with CSP brigadistas to weigh children and counsel mothers. The CSP will provide both the MINSA and CSP brigadistas trained by the program with scales and will deliver GM/C services in health posts and other sites to communities currently without these services. At present, only MINSA nurses provided these services. GM/C sessions will be held monthly in each health post or other sites in the community.

Inputs for this intervention include equipment such as scales and weights for calibration, educational material for training, salaries for staff and staff time. The expected outcome is a sustained increased level of growth monitoring coverage as shown in the growth monitoring objective in Section 5c.22. It is expected that these extended growth monitoring services will be maintained by MINSA after the CS project ends.

Constraints for the GM program which exist in the CSP regions are as follows:

1. A demonstrated loss of mother's interest in GM in the past few years.
2. Insufficient supplemental feeding centers in CSP areas for all malnourished children.
3. High unemployment (50-60%) among those of working age making it difficult for mothers to buy sufficient food for their children[24].
4. Difficult terrain, poor roads and heavy rains making transport difficult in RSJ.
5. Many of the mothers in M6 have day jobs in factories making it difficult for them to attend the growth monitoring sessions.

The CSP will attempt to overcome these constraints through several methods. For instance, it is felt that the mothers have lost interest in growth monitoring because the growth curves are not drawn or explained by MINSA workers, the mothers are not congratulated when their children gain weight and are not counseled on what to do when their children are at risk. Therefore, the mothers cannot see the benefit of attending growth monitoring sessions. To help the mothers understand the necessity of growth monitoring, educational group meetings will be held where mothers are taught about a child's growth and the importance of growth

monitoring through participatory techniques. In order to make the growth monitoring sessions more interesting and helpful to the mothers, the brigadistas will draw a line on the growth card which shows the child's growth and will explain it to the mother, as well as give the mother either praise or counseling on how to better feed her child. In addition, food preparation demonstrations will also be held at the growth monitoring sessions where the mother can learn practically how to prepare nutritious foods for her child.

Regarding constraints 2 and 3, the CSP will work to enable mothers and fathers to be able to provide a greater quantity of nutritious food to their children through: 1) home gardening projects and a concurrent agricultural grant which will help fathers form cooperatives where they learn better farming methods to increase their crops and 2) seeking funding to begin a community banking project for poor urban mothers involved in the CSP.

By providing scales for the communities which are distant from the MINSA health centers, the CSP will attempt to overcome constraint 4. However, overcoming constraint 5 will take more time and thought.

5c25 The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the CHCs in GM/C. Training of health promoters began in November, 1992 and training of brigadistas will begin in April, 1993. Training will focus on the proper method of weighing children, use and interpretation of the growth chart, referral, counseling and follow-up of mothers of at risk children, and conducting food preparation demonstrations.

Health promoters will receive 5 days (40 hours) of initial training in growth monitoring. Refresher training is held 2 days each month on various interventions, amounting to approximately 3 days (24 hours) annually of refresher training in GM/C. Brigadistas receive 3 days (24 hours) of initial training and approximately 3 days (24 hours) of refresher training each year. CHC members (the block representatives) will receive CS training in 1 intervention each month for a half day (4 hours).

The accuracy of the brigadistas measuring technique, recording of data, interpretation of trends in the growth data and counseling of mothers for follow-up action will be assessed by the health promoter who supervises the brigadista at 1 GM/C session every 2 months through use of a supervisory checklist. Also, the MINSA nurses will supervise all GM/C sessions that are held at the health posts.

5c26 Dr. Albert0 Araica, the CSP Director, Rachel Hogue, CSP Health Adviser, and the CSP Area Coordinators will be responsible for the technical oversight of the vitamin A component. The Area Coordinator for M6 is Dr. Jairo Campos, for TPT is Dr. Zorayda Gomez and for RSJ is Juanita De Escorcia. Job descriptions and resumes are attached in Appendix D.

5c27 The CSP will use MINSA growth charts. In M6 and RSJ, MINSA is using the MINSA growth chart which is attached in Appendix E. In TPT, MINSA has coordinated

their maternal and child health interventions with CLAP and is using the CLAP growth chart for growth monitoring. Thus, the CSP will use the CLAP growth chart in TPT (see Appendix E) .

At each GM/C session, the weight of each child will be copied on a second growth chart which is kept in the brigadista's file. In the case that a mother loses her child's card, a new card will be filled out from the duplicate card.

Costs of scales, calibration weights, and educational materials have been included in the budget. (See Appendix F). The MINSA growth charts will be free of charge to the CSP.

5c28 The household register that is kept by the brigadista will have a column that identifies children who were high risk at the GM/C sessions. During the GM/C session the brigadista will refer malnourished children to supplemental feeding centers or to the **MINSA** health center for deworming. These children, as well as children who did not gain weight in the last 2 to 4 months (depending on age - see growth monitoring objective, Section 5c.22) will be visited by the brigadista or block representative once every week following the GM/C session until the child recovers. The block representative will go with the brigadista the first time, then the block representative will follow up weekly. During these visits, the brigadista will educate the mother about proper feeding, observe her food preparation and demonstrate how to better feed the child.

5c29 The links between growth monitoring and the nutritional improvement activities of the CSP were already described in Section 5c.24. The home gardens promoted by the CSP and described in Section 5c.24 will include many vitamin A rich foods to increase the child's vitamin A consumption, as well as general nutrition.

Section D.5d - DIP for Care of Mothers

5d.1 The national MINSA maternal mortality rate was 15/10,000 in 1989.[25] Data from **SILAIS** Oriental (M6 and TPT) reports a total of 8 maternal deaths in 1991 (67% of all maternal deaths in the department of M6).[26] The maternal mortality rate for SILAIS Oriental **(M6 and TPT)** was 11.5/10,000 in 1989 and 9.1/10,000 in RSJ.[27] However, these rates are not considered representative of reality as they are taken from hospital records and do not include many mothers in rural areas who do not deliver in the hospital. The principal causes of maternal mortality were abortions and cervical-uterine cancer in the CSP areas.

5d.2 From baseline survey data it can be estimated that 74% of the women in M6, 70% in TPT and 75% in RSJ make at least 1 prenatal care visit to the health center/health post. Thus, many women do go to the health centers/health posts for prenatal care despite the fact that there is not sufficient supplies of iron, folic acid and other multi-vitamins. In addition, pregnant women do not have access to malaria prophylaxis. Anti-malarials are only available when a pregnant women presents with a case of malaria. The CSP will negotiate with **MINSA to** begin giving malaria prophylaxis to pregnant women.

Traditionally, women do not believe they should avoid any food when pregnant. However, baseline data reveals that most women do not eat a sufficient amount of food during pregnancy. Only 44% of women in M6, 47% of women in TPT and 27% of women in RSJ responded that they ate more than usual during pregnancy. Seventeen percent of women in M6, 21% of women in TPT and 33 % of women in RSJ responded that they actually ate less than usual during pregnancy. In addition, many mothers surveyed on the baseline did not know which foods contained iron (M6, 36%; TPT, 40%; RSJ, 43%).

5d.3 The baseline survey revealed that most women in the CSP areas have their children delivered by a health professional (M6, 81%; TPT, 72%; RSJ, 50%). Births attended by TBAs were 17% in M6, 23 % in TPT and 3 1% in RSJ.

Emergency obstetrical care is available in the regional hospital in each of the 3 CSP areas. In M6 there are 9 gynecologists, 2 in TPT and 1 in RSJ who perform cesarean sections. In RSJ referral services are especially poor since the gynecologist works part-time and attends only 3% of the births in the hospital. Each region has only 1 ambulance which is often unavailable and not sufficient for emergency transport in these areas. When the ambulances are unavailable, transport is very difficult especially at night when buses do not run. Taxis are very costly and only available in the urban areas. All 3 hospitals have a sufficient blood supply for emergency obstetrical care.

Training of the gynecologists and nurses who perform deliveries is sufficient. Training of the midwives who attend births in many of the health posts is adequate in M6 and TPT. TBA training is conducted by the MINSA gynecologists. However, in RSJ MINSA lacks money to conduct TBA training and therefore the training is practically nonexistent.

5d.4 Women in the CSP regions have access to post-natal care services in health centers/health posts. Women who had their deliveries in hospitals, health centers or health posts are referred for post-natal care to the health centers after 8 days post-par-turn. There the women are examined by nurses who take vital signs and weight, do a vaginal exam, and check for vaginal bleeding and proper healing of the episiotomy. Blood work is done to check for anemia and if needed, iron and vitamins are administered. Women are also counseled about breastfeeding, nutrition and family planning. The child is weighed and referred to GM/C sessions held at the health center or site nearest to the home. If there is any abnormality, the mother is referred to a doctor. She will then return for a follow-up visit in forty days.

Of the women referred for post-natal care, 40% made at least 1 post-natal care visit in M6, 5% in TPT and 95% in RSJ in 1992 according to MINSA reports.[28] However, it seems highly unlikely that the numbers would vary this greatly between M6 and TPT. The percentage for RSJ also seems very high given the difficulty of travel in the area.

5d.5 Birth spacing practices according to baseline survey data for women who are not pregnant and do not want another child in the next 2 years are as follows:

	Use of any Birth Spacing Method	Use of Modem Method of Birth Spacing
Managua	59%	54%
Tipitapa	57%	46%
Rio San Juan	41%	37%

MINSA provides birth control pills and IUDs, but the supply is not always adequate. In addition, tubal ligations are performed at MINSA regional hospitals. All of these services are free. PROFAMILIA, a PVO working in Nicaragua, also provides family planning services such as tubal ligations, vasectomies, birth control pills, condoms, spermicides and vaginal suppositories at low cost in M6 and TPT. Tubal ligations, vasectomies and IUD insertions are performed at the PROFAMILIA center in M6. Other contraceptives are sold in the center, as well as 12 posts throughout M6 and TPT.

5d.6 The potential beneficiary population of fertile aged women 15-49 for the maternal care intervention is 53,030.

Pregnant women who meet 1 or more of the following criteria will be considered to have high risk pregnancies:

- women less than 18 or older than 35
- women with 4 or more children
- women with an interval between pregnancy of less than 2 years
- women who had a previous child born low birth weight
- women who had a previous Caesarian birth
- women who had a previous miscarriage, premature or stillbirth
- women with signs of anemia or edema
- women who have vaginal bleeding since the last period
- women who have not received at least 2 doses of tetanus toxoid

5d.7 Objectives for maternal care are shown below in Tables 15 and 16.

Table 15: Pregnant Women who Receive their First Prenatal Care Visit in the First Trimester of Pregnancy

	Year 1	Year 2	Year 3
Managua/Tipitapa	408 (35%)	1,744 (40%)	2,911 (50%)
Rio San Juan	585 (65)	1,334 (70%)	1,746 (75 %)

Table 16: Women 15 - 49 who Use a Modem Method of Family Planning

	Year1	Year2	Year3
Managua/Tipitapa	4,267 (50%)	17,533 (55%)	22,900 (60%)
Rio San Juan	1,406 (35 %)	3,404 (40%)	4,680 (45 %)

5d.8 The CSP maternal care program strategy will focus on educating women 15-49 in group meetings held by the brigadista. Adolescent girls will also be invited to attend these meetings to prepare them for motherhood.

Brigadistas will be educated to identify high risk pregnancies and refer these women to the nearest health center. The brigadistas will also educate mothers in risks that may complicate pregnancy. The focus is on high risk ages, birth spacing of less than 2 years and incomplete immunization with TT. Mothers will be taught about modem contraceptive methods, to space births by 2 years, where contraceptives may be obtained.

Women will be taught about the physiologic changes that occur during pregnancy and the need for prenatal care and good nutrition. Women will be taught to go to the health center or post for prenatal care in the first trimester. Maternal nutrition will also be emphasized since the nutrition behaviors of the women are very poor. Women will be taught to eat greater quantities of food to make their babies healthy and the importance of eating iron rich foods. She will be taught which foods are rich in iron and food demonstrations will be given at the session to show her how to prepare them.

Support groups will be formed where pregnant mothers can meet and exchange experiences. These groups will be coordinated by the health promoters with the help of the brigadistas and will focus on nutrition, prenatal care, preparation for delivery and child care. Women in their first pregnancy will be able to learn from more experienced mothers.

The brigadistas will not directly distribute contraceptives to women, but will refer the women to MINSA facilities or PROFAMILIA posts where services may be obtained. There are 7 PROFAMILIA family planning posts in TPT and 5 in M6.

Since this project focuses primarily on educating mothers in prevention strategies, it is beyond the scope of this project to provide transport for obstetrical emergencies or to educate referral site staff. However, the brigadistas will discuss the issue of transport with the CHCs to see if they may be able to find a solution for this problem.

5d.9 Planned inputs for the maternal care component include salaries, staff time, and educational materials. Maternal care activities will be phased into the regions starting with MINSA's highest priority communities in year 1 and by year 3 will cover all project areas.

During year 1, at total of 8,568 families will be enrolled in the project. During year 2, a total of 27,372 families will be covered by the project and by the end of year 3 all families (a total of 35,844) should be covered.

Constraints on attempts to improve the maternal health of women in the CSP areas includes:

Birth spacing:

1. Religious beliefs: Catholic churches and some Evangelical churches in the CSP area consider family planning to be a sin.
2. Husbands want to have many children to show virility and women believe it is their duty.
3. There is often not a sufficient supply of contraceptives in MINSA facilities.
4. There is a lack of facilities where tubal ligations are performed.

Nutrition:

1. The poor economy in these areas makes it difficult for a woman to buy sufficient food to ensure sufficient weight gain during pregnancy.
2. Many women in Nicaragua believe that the first 40 days after a child is born women should eat only tortillas, pinol and cheese.

High risk births:

1. Lack of emergency transport.
2. Great distances to health facilities and poor roads in RSJ make it difficult for many women to go to the hospital or health center to deliver their babies.

Attempts to overcome birth spacing constraints include having a church representative as part of the CHC and educating pastors in the importance of birth spacing for maternal health and the health of her children. Another approach to overcoming these constraints includes participative group educational meetings held with on the importance of birth spacing. Possible coordination with PROFAMILIA which provides education in family planning for men will be discussed. Perhaps PROFAMILIA education sessions for men in the communities where the male beliefs are a major barrier to family planning will be useful. Finally, to improve womens' access to contraceptives, the CSP will work with PROFAMILIA and refer women to their posts when MINSA facilities lack supplies.

To enable women to be able to eat the proper quantity **and quality of foods** during pregnancy and lactation, home gardens will be promoted rural CSP areas. In urban areas, WRN is has secured funding to implement community banks which will give small loans to help women begin small businesses in urban areas which will improve their income and their ability to buy nutritious foods. In addition, women will be taught in group meetings and through food demonstrations which foods are important during and after pregnancy (vitamin A and iron rich) and how to prepare them.

The CSP will be unable to provide transport to women with complicated pregnancies. However, constraints regarding transportation will be discussed in CHC meetings and community solutions sought.

5d10 The CSP will use the MINSA pre-natal care card in each of the CSP areas. See Appendix E for a sample of the card used in M6 and RSJ and for a sample of the CLAP card used by MINSA in TPT. Since the CSP will not be present when these cards are filled out at the health centers/health posts, the CSP will not collect all of the information. However, some of the information will be entered into the family registry system during home visits. To prevent cards from being lost, the brigadistas and block representatives will teach the mothers the importance of retaining the cards. Those who lose their cards will be counseled to go to the health center/health post to get a new one.

5d11 The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the CHCs (most of these are block representatives) in maternal care. Training of health promoters will begin in July, 1993 and training of brigadistas will begin in August, 1993. Health promoters will receive 5 days (40 hours) of initial training in growth monitoring. Refresher training is held 2 days each month on various interventions. Each year this would amount to approximately 3 days (24 hours) of refresher training in growth monitoring. Brigadistas receive 3 days (24 hours) of initial training and approximately 3 days (24 hours) of refresher training each year. CHC members (including block representatives) will receive CS training on 1 intervention each month for a half day (4 hours).

The CSP health promoters, brigadistas and block representatives will not be involved in service delivery, but rather education for maternal care. Thus, no supervision will be necessary on performance of antenatal care, delivery and post-natal care.

Although there is evidence from the baseline survey that some of the mothers are attended by TBA's in the CSP areas (M6, 17%; TPT, 23%; RSJ, 31%), the CSP will focus on educating mothers to go to the health centers in the first trimester for prenatal care, good nutrition and birth spacing. However, TBA training will be considered in the expansion phase of the project.

5d12 The number and type of health worker to be trained in birth spacing information and education is the same as stated above for maternal care in Section 5d. 11.

The quality of the brigadistas performance in birth spacing promotion will be supervised by the health promoter responsible for each brigadista. The health promoter will attend 1 of the mothers' group meetings held by each brigadista and will fill out supervisory checklists to make sure all information is taught and all participatory educational techniques used.

5d13 The basic health messages to be communicated to women to promote prenatal care include:

1. Becoming pregnant before the age of 18, or after the age of 35 increases the health risks for both mother and child.
2. There is less risk of death for the mother and child if the space between births is less than 2 years apart.
3. Having more than 4 children increases the health risks of pregnancy and childbirth.
4. All pregnant women should visit the health center/health post or TBA in the first 3 months of pregnancy for prenatal care.
5. All pregnant women need extra food and should have 2 extra meals per day.
6. All pregnant women need to consume iron rich foods to prevent anemia.

In addition to women 15-49, male community leaders and church members who are involved in the CHCs will also be taught the above health messages and will share these health messages with others in the community.

5d14 The only equipment and supplies to be purchased by the CSP for the maternal care component include slide and overhead projectors (used for all interventions), education materials and miscellaneous office supplies. These costs are reflected in the budget in Appendix F.

5d15 Dr. Alberto Araica, the CSP Director, Rachel Hogue, CSP Health Adviser, and the CSP Area Coordinators will be responsible for the technical oversight of the maternal care and family planning component. The Area Coordinator for M6 is Dr. Jairo Campos, for TPT is Dr. Zorayda Gomez and for RSJ is Juanita De Escorcia. Rachel Hogue, MPH will act as a half-time adviser for the project. Job descriptions and resumes are attached in Appendix D.

Section D5.e - DIP for Case Management of Childhood Acute Lower Respiratory Infections/Pneumonia (ALRI)

5e.l MINSA data regarding ALRI mortality and morbidity in children under 5 are inexact. However, according to MINSA statistics, the mortality rate for children under 1 was 3.2/1000 in M6 and 4.1/1000 in TPT[29] In children under 5, there were a total of 15,867 cases of ALRI reported in M6 in 199 1. In the area of Villa Venezuela (one of the two M6 municipalities) this represented 62 % of all illnesses in children under 5.[30 31] In 1992, 6,136 cases of ALRI were reported in TPT[32] The baseline surveys shows a prevalence of ALRI of 30%, 3 1% and 40% respectively in M6, TPT and RSJ in the last 2 weeks. Infant mortality attributed to ALRI in Rio San Juan was 3/1000 in 1989.[33]

5e.2 According to baseline survey findings approximately half of the mothers in all 3 CSP areas did not know the signs of ALRI. For instance, knowledge of rapid respiration as a sign of ALRI was 47% in M6, 46% in TPT and 50% in RSJ. Knowledge of intercostal retractions as a sign of ALRI was very low at 4% in M6 and TPT and 9% in RSJ. However,

most mothers did seek appropriate treatment at a MINSA health facility or from a private doctor (M6, 78%; TPT, 53%; RSJ, 86%).

In the CSP areas, most doctors and nurses give out prescriptions, but do not educate mothers about ALRI. There are no current educational programs for mothers in ALRI.

The travel time to the nearest referral site varies by area and is dependent on the distance from the site and mode of transportation available. Travel is most difficult in RSJ where the most remote homes may be 3 or more hours away from the nearest health facility. However, in populated areas such as San Carlos, the health facility is 20 minutes or less traveling time. In M6 and the urban areas of TPT, the health centers/health posts are within close proximity. Depending on traffic, a bus ride could take up to one hour. In the rural areas of TPT, travel could take up to 2 hours for those living a great distance from the health post.

5e.3 All MINSA facilities follow the WHO algorithm for treatment of pneumonia in children under 5 and those under 2 months. MINSA policy permits licensed doctors and nurses to write prescriptions for antibiotics. Pharmacies should sell these only upon receipt of a prescription. However, there is no governmental control over the sale of antibiotics.

The antibiotics recommended by MINSA to treat ALRI are the following:

a). For pneumonia trimethoprin sulpha, orally or intramuscular procaine penicillin are used daily for 5 days and are given in the home. If after 2 days the situation has not improved, the child should be sent to the hospital to be treated for severe pneumonia.

b). In case of severe pneumonia or very severe pneumonia the patient is taken to the hospital and receives oxygen if the respiratory rate is 70 breaths or more per minute. The patient receives crystalline penicillin intramuscular or by intravenous every 6 hours for at least 3 days, along with procaine penicillin for 5 days. If the child is malnourished or the illness has not improved chloramphenicol palmitate is used.

c). In case of severe pneumonia crystalline penicillin plus gentamycin is used. If the child does not improve in 48 hours, amikacina plus chloramphenicol is used when the child is older than 2 months. If the child is less than 2 months old dicloxacilina plus amikacina will be used.

5e.4 ALRI is treated at all MINSA hospitals, health centers and health posts. In M6 there are 28 MINSA facilities that treat ALRI, 15 in TPT and 31 in RSJ. Training is given to all doctors and licensed nurses once each year on standards of treatment and the WHO case management algorithm for diagnosis and therapy. All MINSA heath workers use this algorithm for diagnosis and therapy.

The full course of treatment is not available from MINSA, only the first dose, after which the mother must purchase the rest of the medicine from the pharmacy. Often the mother may be too poor to purchase the medicine and will not complete treatment. In addition, the supply of antibiotics tends to be good at the beginning of each month, but runs out during the

middle of the month. Thus, those who come to the health center with ALRI during the middle or end of the month must buy the antibiotics at private drug stores where the cost is much higher.

Se.5 MINSA does not keep a record of percent of ALRI cases in children under 5 treated with antibiotics by health facility workers. Dr. Olga Chavez, Director of SILAIS Oriental of M6 stated that every health center has different prices for antibiotics. On average, the price for 5 days of treatment with ampicillin is 30 cordobas ($5.00), 24 cordobas ($4.00) for trimethaprin sulpha and 70 cordobas ($11.67) for penicillin.

5e.6 The potential beneficiary population for the ALRI component includes children O-23 months and is 15,849.

Barriers to children receiving appropriate diagnosis and treatment are described below:

1. Insufficient supply of antibiotics in the MINSA facilities.
2. Difficult transport to MINSA facilities in RSJ and rural areas of TPT.
3. Lack of proper control of antibiotics in pharmacies and stores.
4. The poor economic condition making it difficult for mothers to buy antibiotics at the pharmacy.

5e.7 The project objective for ALRI is shown in Table 17 below.

Table 17: Mothers of Children O-23 Months who are Able to Recognize Rapid Breathing as a Sign of ALRI

	Year1	Year2	Year3
Managua/Tipitapa	1,123 (50%)	5,043 (60%)	7,296 (65 %)
Rio San Juan	979 (55%)	2,449 (65 %)	3,224 (70%)

5e.8 Inputs for the ALRI component include salaries, staff time, and educational materials. Expected outcomes include a greater percent of mothers who are able to identify the signs of ALRI and who seek appropriate treatment when their child has the signs of ALRI.

The ALRI intervention will be phased into the regions starting with MINSA's highest priority areas in year 1 and by year 3 will cover all project areas. In year 1, a total of 8,568 families will be enrolled in the project. In year 2, a total of 27,372 families will be covered by the project and by the end of year 3 all families (a total of 35,844) should be covered.

The CSP strategy complements that of MINSA by promoting MINSA services and motivating mothers to use these services. The CSP project health messages will follow those of MINSA.

5e.9 Diagnosis and antibiotic treatment will be provided by the MINSA workers already providing these services. The CSP will focus on educating mothers to recognize the signs of ALRI so that they will seek immediate treatment at the MINSA health facilities.

5elO There is a good relationship between the CSP and the MINSA facilities providing ALRI case management services. Dr. Zuniga, CS Director of the Honduras CSP will be brought in to conduct a seminar for MINSA workers in ALRI in Year 1.

5e11 The CSP will not be delivering case management services.

5e12 The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the CHCs (including block representatives) in ALRI. Training of health promoters will begin in June, 1993 and training of brigadistas will begin in July, 1993. Health promoters will receive 5 days (40 hours) of initial training in growth monitoring. Refresher training is held 2 days each month on various interventions amounting to approximately 3 days (24 hours) annually of refresher training in ALRI. Brigadistas receive 3 days (24 hours) of initial training and approximately 3 days (24 hours) of refresher training each year in ALRI. CHC members will receive CS training on 1 intervention each month for a half day (4 hours).

ALRI training will include identification of signs/symptoms of ALRI, prevention of ALRI through immunizations, breastfeeding, nutrition and vitamin A supplementation and reduction of a child's exposure to smoke.

Since the CSP will not be involved in case management of ALRI, but will rather educate of mothers, this intervention will not significantly impact brigadistas or health promoters.

5e13 MINSA currently uses the WHO AR1 case management algorithm. The antibiotics and specific dosages used are according to a child's weight taking into account the malnourished child. For cases of pneumonia, penicillin is given in 50,000 units/kg/day for 5 days. When penicillin is unavailable trimethoprin sulpha is given in four 7-10 mg/kg/day doses for 5 days or until the pneumonia clears.

5e14 ALRI training will include identification of signs/symptoms of ALRI, prevention of ALRI through immunizations, breastfeeding, vitamin A nutrition and supplementation and reduction of a child's exposure to smoke. The educational materials used adapted from Project Hope Honduras materials by Project Hope Nicaragua and World Relief Honduras for use in Nicaragua.

The CSP staff will train a total of 39 health promoters, 468 brigadistas and 4,596 members of the CHCs (includes block representatives) in ALRI. Training of health promoters will begin in June, 1993 and training of brigadistas will begin in July, 1993. Health promoters will receive 5 days (40 hours) of initial training in GM/C. Refresher training is held 2 days each month on various interventions which would amount to approximately 3 days (24 hours)

of refresher training in growth monitoring annually. Brigadistas receive 3 days (24 hours) of initial training and approximately 3 days (24 hours) of refresher training each year in ALRI. CHC members will receive CS training on 1 intervention each month for a half day (4 hours).

5e15 The CSP will neither train MINSA health workers in case management of ALRI, nor provide these services, the CSP will not supervise ALRI case management, nor evaluate MINSA training. The CSP brigadistas will, however, follow up on referrals 1 to 2 days after the referral was made to see if the child received treatment.

5e16 The education given to mothers will include training on identification of rapid respiration and intercostal retractions as important signs of pneumonia, the danger of death from pneumonia and the urgent need to take a child to the health center/health post, the need for DPT and measles immunizations and the importance of breastfeeding, good nutrition and vitamin A. Specific ALRI health messages to be given include:

1. **A** child can die from pneumonia.
2. **A** child, with a cough, who is breathing much more rapidly than normal, is at risk. It is essential to get the child to the health center or health post quickly.
3. Families can help prevent pneumonia by making sure that babies are breastfed and all children are well-nourished and fully immunized.
4. **A** child with cough or cold should be helped to eat and to drink plenty of liquids.[34]

No health message will be given about traditional remedies for this intervention.

5e17 Since the CSP will focus its strategy on educating mothers to recognize and prevent ALRI/pneumonia and not on direct case management, antibiotics will not be supplied by the CSP.

5e18 Dr. Alberto Araica, the CSP Director, Rachel Hogue, CSP Health Adviser, and the CSP Area Coordinators will be responsible for the technical oversight of the ALRI component. The Area Coordinator for M6 is Dr. Jairo Campos, for TPT, Dr. Zorayda Gomez, and for RSJ, Juanita De Escorcia. See Appendix D for job descriptions and resumes.

Section D.5f - DIP for Control of Malaria

5f. 1 In recent years there has been an increase in the number of malaria cases in Nicaragua with a total of 21,818 cases reported in 1991. Children under 5 accounted for 17.5% of these cases. In RSJ, 42% of reported cases of plasmodium vivax affected children under 9 and 30% of plasmodium falciparum were in this same group of children. Pregnant women were also greatly affected. In 199 1 in TPT, 659 cases of malaria were reported at an incidence rate of 9.8/1000, while in M6 incidence over the last 10 years has been 6.7/1000. Nationally, the prevalence of malaria for children O-l 1 months in 1991 was 2.48% with the prevalence of parasitemia at 3.66/1000. In children 1 through 4 years old the prevalence of

malaria was 14.1% with a prevalence of parasitemia of 5.61/1000.[35] Virginia Roman, National Director, Malaria Program, stated that on average a person in Nicaragua has 1 to 2 episodes of malaria annually.

Baseline survey data shows that mothers in the CSP area do consider malaria a problem as many use some method of malaria prevention [M6 (68%); TPT (65%); RSJ (75%)], with 52 % of those in M6, 5 1% of those in TPT and 70% of those in RSJ using at least 1 of the following: mosquito nets, malaria prophylaxis or drainage of water collection sites. To reduce the incidence of malaria, more mothers need to practice these methods.

5f.2 Virginia Roman, National Director, Malaria Program, also stated that MINSA has antimalarial drugs (primarily chloroquine) to treat all cases of malaria which present at the hospitals, health centers or health posts. Antimalarial drugs are available in private pharmacies.

Ms. Roman said that there are no studies on plasmodium resistance to chloroquine. In her opinion, resistance is low since all known cases have been successfully treated with chloroquine. However, she stated that there is some resistance to some insecticides, especially pyrethroids.

5f.3 No biomedical data for malaria was collected during the baseline survey.

5f.4 Most mothers prefer to use chloroquine to traditional remedies. However, Virginia Roman, National Director, Malaria Program stated that many of the mothers use malaria prophylaxis in inappropriate doses, which promote endemicity and do not eradicate the disease.

Traditional treatments for malaria are still used in rural areas such as RSJ. For instance, herbal remedies are made from the bark of quinine trees. This does help to cure malaria, but can also have harmful side effects such as kidney failure, or it can cause miscarriages in pregnant women. Other herbal remedies used are those made from the “big man” tree and the “pectoral” tree which mask the symptoms of the disease, but do not kill the parasites in the blood. These also can cause miscarriages in pregnant women.

5f.5 The potential beneficiaries for the malaria component are 37,507 children under 5 and 53,030 women 15-49.

High risk criteria for the CSP for malaria is defined as[36]:

1. Children 6-59 months.
2. Malnourished children.
3. Children suffering from other illnesses.
4. Pregnant women.

5f.6 Proiect Objective for Malaria: Table 18 below outlines the proposed objective for Malaria prevention.

Table 18: Mothers who Practice at Least One Method of Malaria Prevention
(Prevention Methods included are Bed-nets, Water Drainage or Malaria Prophylaxis)

	Year1	Year2	Year3
Managua/Tipitapa	2,903 (55 %)	11,863 (60%)	17,167 (65%)
Rio San Juan	3,194 (75 %)	7,2 14 (80%)	9,368 (85 %)

5f.7 MINSA has recently reorganized the malaria control program to better address disease control and in accordance with the restructuring of MINSA into local systems of holistic health attention (SILAIS). The strategies are oriented to case management and environmental control.

Case Management
At the level of the community, MINSA brigadistas screen the population for malaria by collecting blood from persons who have 4 symptoms of malaria and from persons in endemic zones. The blood samples are sent to health centers with lab facilities. Once cases are found they are treated and a follow-up blood sample is taken and sent to the lab 8-15 days after treatment. Pregnant women and children who present at health centers with malaria signs and symptoms are given a blood test for malaria, then are given treatment with chloroquine and primaquine. Severe malaria cases are referred to the regional hospital.

Environmental Control
Environmental control consists mainly of vector control by spraying insecticides in endemic zones and mass campaigns where a malaria epidemic exists. In these mass campaigns the entire population of the region is given malaria treatment medication for 5 days. In resettlement locations where migration is high, prophylactic doses are given for 8 weeks to those recently settling in the region.

The following persons should be hospitalized for malaria[37]:
1. Children infected with p. vivax along with another disease such as ALRI, or diarrhea.
2. Children infected with p. vivax who are malnourished,
3. Pregnant women with malaria.
4. Any person suffering from a p. falciparum infection.

5f.8 The strategy of the CSP will be to educate mothers on transmission of malaria, recognition of signs/symptoms of malaria so that they will seek help at the hospital/health center, 3 methods of malaria prevention (use of bed-nets, drainage of water collection sites and correct use of chloroquine as a malaria prophylaxis). During malaria treatment, mothers will be taught to use cool compresses to reduce the child's temperature and avoid

dehydration, convulsions or cerebral damage, to give ORS to the child to prevent dehydration, especially a child who has diarrhea or vomiting, and that a child recovering from malaria needs plenty of foods and fluids. When the block representative or brigadista suspects that a child has malaria, she will refer the mother to the nearest health facility where medications can be obtained free of cost and where the mother will be educated about proper dosage.

No training will be given by the CSP to pharmacies and store owners or workers since this program focuses primarily on education of mothers.

5f.9 The CSP will not teach mothers how to treat malaria with over-the-counter drugs, but will rather refer the mothers to the nearest health facility where they can obtain the proper drugs and be educated on the full course of treatment by trained health staff.

Mothers will be taught by the CSP brigadistas to recognize the signs/symptoms of malarial complications (cerebral malaria, hyperpyrexia and anemia). Mothers will be taught that high fever, convulsions, delirium, dizziness and coma are signs of severe malaria which can cause brain damage and death. In the case of hyperpyrexia mothers will be taught to control the fever by using cool compresses and by giving aspirin or paracetemol. Mothers will be taught that malaria leads to severe anemia, which is especially dangerous for pregnant women because it can lead to miscarriages, premature births or still births. They will also be taught to identify anemia by checking for skin and mucus membrane pallor.

Participatory educational techniques such as role plays, games, stories, drawings, group reflections and case studies will be used to educate mothers to recognize and prevent malaria.

5flO During the monthly group meetings, brigadistas will teach mothers to give a child with malaria and diarrhea ORS to prevent dehydration, increased fluids and to continue normal feeding, especially breastfeeding and the use of cereal-based atoles. Mothers will be taught to identify the 3 signs of dehydration (dry mouth, sunken eyes and decreased urination) and to take a dehydrated child to the nearest health facility while continuing to administer ORS.

5fll The CSP staff will not promote insecticide treated bed-nets since they are expensive and not available in the CSP areas. However, the CSP staff will promote the use of bed-nets which are available in project areas, especially in RSJ where malaria is endemic. According to the national malaria control program annual report, RSJ had a rate of endemicity of 33/1000 inhabitants during 1991.

5f12 There are currently no programs in the CSP regions promoting treated bed-nets.

5f13 The CSP will not organize the purchase or distribution of bed-nets as part of the malaria intervention, but rather train mothers on methods of prevention. This issue will be

discussed with the CHC's to see if they can find methods to help families obtain bed-nets. If the CHC's are interested in helping families obtain bed-nets, the CSP will help them to contact other organizations who can aid a project of this nature.

5f14 Since the CSP will not be organizing the purchase and distribution of bed-nets, it will not have to sustain this component.

5f15 The educational messages disseminated by the CSP to promote the use of bed-nets and other prevention methods are as follows:

1. Young children should be protected from mosquito bites at night through the use of bed-nets which will help protect them from malaria.
2. Communities should destroy mosquito larvae and prevent them from breeding.
3. Where malaria is common, a child who has fever should be taken to the nearest health facility.
4. Where malaria is common, all pregnant women should take antimalarial drugs which are available at the nearest health facility.

These health messages are adapted from Adamson, P. and Williams, ***G., Facts for Life,*** UNICEF. The above messages will be transmitted to the mothers by the brigadistas who hold group educational meetings each month with groups of approximately 30 mothers. Group meetings are held in 2 different locations of each community each month.

5f16 The CSP will not be directly involved in a bed-net project and will not be able to assure that bed-nets reach the target population. However, the CSP will track the use of bed-nets in the target population through the household registry system.

5f17 From her previous experience in working to control the spread of malaria in Nicaragua, Virginia Roman, National Director, Malaria Control Program outlined the following constraints to the success of the malaria interventions in the CSP regions:

1. Communities are unaware of the effects of malaria and lack initiative to organize community efforts to fight the spread of malaria.
2. Self medication is common and incorrect dosages are often used.

In order to overcome these constraints education of mothers will focus on the dangers of malaria, methods of malaria prevention in which the mother and CHC's could effect change and the importance of taking the full course of malaria medications in the proper dosages.

5f18 Dr. Albert0 Araica, the CSP Director, Rachel Hogue, CSP Health Adviser, and the CSP Area Coordinators will be responsible for the technical oversight of the malaria control component. The Area Coordinator for M6 is Dr. Jairo Campos, for Tipitapa, Dr. Zorayda Gomez, and for RSJ, Juanita De Escorcia. Job descriptions and resumes are attached in Appendix D.

Section E. PROJECT HEALTH INFORMATION SYSTEM

E.1 The CSP will develop its health information system (HIS) with Dr. James Becht providing technical assistance. He will visit the project from April 12 - 20 and the CSP will begin using the HIS in June, 1993. Resources set aside to organize the HIS include the following:

1. Human Resources: Dr. Albert0 Araica, Project Coordinator and each of the 3 area coordinators will work for a 1 week period, along with Dr. Becht to develop the HIS. 4 thousand dollars has been budgeted to pay for his consultancy. Dr. Araica and the area coordinators will be responsible for management of the HIS throughout the project. Their job descriptions and resumes are attached in Appendix D.
2. Material and Equipment: Includes a mimeograph machine to make copies of registry forms, stencils, paper and ink. The CSP has access to a mimeograph machine which can be borrowed from another PVO. Stencils, paper and ink are budgeted for under the printing/reproduction line item in communications. Costs of binding the registers are budgeted under the same line item. A total of $1,000 has been budgeted for these costs.

E.2 The CSP is currently conducting a census of first year target families. Each year a census will be taken of the new families to be added to the project target population. Figures are currently not available as the census is still in process.

Both brigadistas (126) and block representatives (756) were trained to complete the census in Year 1. By the end of the project, a total of 468 brigadistas and 3,660 block representatives will be given 1 day (8 hours) of training to conduct the census. Since the CSP will be keeping a household registry system covering all families targeted by the project, all new births, deaths and migration will be added to the system on a regular basis as they occur.

E.3 Data on indicators for objectives 1, 2, 5, 6, 9, 11 and 13-15 will be collected through the household registry system and data on indicators for objectives 3, 4, 7, 8, 10 and 12 will be collected through the final evaluation K&P survey. See Section D.2.

Data for objectives 1, 2, 5, 6, 9 and 11 will be collected at the EPI sessions, GM/C sessions, or mass EPI or vitamin A campaigns by the brigadistas and written in the register at that time. Each brigadista will receive the data collected by each of her block representatives for objectives 13-15 and enter the data into the register when she receives the information on a monthly basis. This information is then passed onto the health promoter each month who compiles then passes it to the area coordinator. The area coordinator compiles the information and gives it to the Program Coordinator who writes the quarterly report which is sent to headquarters (HQ). HQ staff review the reports then give feedback in the next 30 days to field staff. The quarterly reports are also sent to the HQ resource development division to provide information to donors. Locally, quarterly reports are also sent to the MINSA regional directors. Charts and graphs measuring objectives from the quarterly reports are given to the health promoters who present the data to the brigadistas, who then

meet with the CHC's to discuss the results and resolve any difficulties the project may be having in meeting the objectives. All data from monthly reports will be stored in the area offices by each area coordinator.

In order to assure that data is being collected properly, random spot checks will be made by the health promoters on 15 of houses each month. The area coordinators will also randomly check 5 houses each month.

Data collection for the K&P survey is done by the health promoters who act as interviewers. All K&P survey data will be stored in the WRN central office in M6.

Confidentiality of personal health data will be protected by explaining that the data must be kept confidential and by having the brigadista sign a commitment that personal health data will be kept confidential. If the brigadista breaks confidentiality, a warning will be given. If confidentiality is broken a second time, the health promoter and area coordinator will discuss actions to be taken.

E.4 The CSP staff has received training in conducting "30 cluster" K&P surveys in October, 1992 and February 1993. The CSP Director and all 3 area coordinators have worked in the MINSA system and have several years of experience working with MINSA data collection systems. Further training on the specific HIS for the CSP will be given by management staff after the technical assistance visit of Dr. James Becht in April, 1993.

Once the system has been developed, a total of 39 health promoters, 468 brigadistas and 3,660 block representatives in the HIS. Training of these workers in the HIS will take place during training for each intervention each month. For example, during the initial training on EPI, the health promoters and brigadistas will be trained in how to keep the household register and file copies of EPI cards. They will then practice keeping EPI data as they begin to implement this intervention. When the initial training for the next intervention is conducted in the next month, the brigadistas will learn how to collect and record data for this intervention and practice keeping data until all interventions have been covered. The initial training in the HIS for each intervention will take place over 7 months. Any adjustments made to the HIS after the initial training will be covered during the monthly refresher training given.

E S Representatives of MINSA and Development Associates (contracted by the USAID Mission to work on local health grants) attended the baseline survey training and pilot test for M6 and TPT. A representative of Development Associates was also present during the manual tabulation of TPT data. One coordinator, 5 supervisors and 12 interviewers conducted the baseline survey in RSJ. 3 coordinators, 5 supervisors and 11 interviewers conducted the 2 baseline surveys for M6 and TPT. Data collection was completed in 4 days in RSJ which is rural due to the difficult terrain, weather conditions and distances traveled. In M6 which is urban, data collection took 2 days and in TPT, which has both urban and

rural areas data collection was completed in 3 days. The cost of the RSJ baseline survey was $3,918 and the cost of the 2 surveys for M6 and TPT was $3,971.

Section F. HUMAN RESOURCES

F.1 The organizational chart is attached in Appendix G and resumes and job descriptions to be used for the project are shown in Appendix D.

F.2 The CSP brigadistas will be forming and working with mothers' groups on a monthly basis to transmit the CSP health messages. Each brigadista will be responsible for 2 mothers' groups in her community. A total of 936 mothers' groups will be formed.

F.3 A total of 468 brigadistas and 2,808 block representatives will be involved in this project. The ratio of brigadistas to families in M6 is 1:87, in TPT is 1:82 and in RSJ is 1:56. The population density in M6 is the highest in the CSP area making it easier for each brigadista to cover more families. The number of families covered by each brigadista in RSJ is much lower because of the difficult terrain and the fact that families are dispersed Each block representative will be responsible for an average of 10 neighbor families. A total of 39 health promoters will each supervise 12 brigadistas.

F.4 The estimated turnover of trained brigadistas is 15%. New brigadistas will be added to replace the brigadistas who leave on a yearly basis so that they will be able to receive the full course of training in each intervention.

F.5 In order to reduce drop-out and promote commitment to the project the incentives listed below will be implemented by project staff:

1. Brigadistas and members of the CHC's (block representatives) will live in the community and be selected by the community. This will help to ensure that the volunteers actually have a desire to improve their own communities and will be less likely to move out of the community.

2. All training given to volunteers will employ a participative methodology based on their own experiences in which the volunteer will enjoy learning and be motivated to share her new knowledge with the community through use of the same educational techniques.

3. Health promoters will hold celebrations for each brigadista's birthday.

4. The brigadistas will receive a diploma after completing initial training in each of the interventions.

5. Provision of travel to the health center or provision of medicine when the brigadista or member of the brigadista's family is ill. In coordination with MINSA, the CSP will also offer free medical consultations when needed.

6. Brigadistas will be included in the families to receive vegetable gardens or loans from the community bank so they will be able to increase their income.

7. A yearly trip to other CS projects will be planned for the brigadistas so that they will be able to travel and to exchange experiences with others involved in similar work.

8. Contests will be held each month in which the brigadista who has the best developed interventions or highest coverage each month will be recognized before the community and before the other project staff. The brigadista will also be given a small gift.

F.6 Several methods will be used to maintain the technical skills of staff and volunteers. First of all, refresher training will be given for 2 days each month to the health promoters and 1 day each quarter to the brigadistas. Second, external or local consultancies will be sought from experts in the interventions needing the most improvement throughout the project. Third, 1 trip each year to a health conference for the CSP Director or the CSP Health Adviser has been budgeted to keep the project staff informed on recent research or new CS strategies. Fourth, meetings will be held with other PVOs involved in CS activities in Nicaragua to share lessons learned and visits will be made to other projects to explore new strategies. The CSP will not rely significantly on MINSA personnel for in-service training.

F.7 Except for half-time support from the Health Adviser and the half-time accountant, country nationals manage the entire CS project. Long term plans for enhancing their skills in planning, budgeting, accounting, personnel management, financial management and computer use includes several weeks of training 1 to 2 times each year from the HQ CS Director and CS Administrative Coordinator during their visits to the field, on-going support from the CSP Health Adviser and consultations with experts in the interventions that are the weakest.

Both the CSP Director and CSP Health Education Specialist have recently completed computer courses from Instituto Nicaraguense de Computación to learn MS DOS, WordPerfect, and Lotus software programs. EPI info 5b will be taught to the CSP Director by the CSP Adviser so that national staff will be able to conduct K&P surveys from start to finish.

Transfer of CS experience from the Honduras CS program will take place through 2 visits scheduled in year 1 by Dr. Zuniga, Honduras CSP Director, who already made 1 visit to train staff to conduct K&P surveys and will make another visit to give ALRI training to CSP and MINSA staff.

In addition, Aminta Ferrufino, who developed the Honduras CS training curriculum and worked for several years in the Honduras CS project as the Health Educator is now working full-time in the WRN CSP as the Health Education Specialist. Another way in which WRN CSP staff will learn from the Honduras experience is through a trip that the management staff will make to Honduras for a seminar in July, 1993 being held by the World Relief Honduras CSP.

F.8 Dr. Muriel Elmer (CS Director) and Lisa Filoramo, MSPH (CS Administrative Coordinator) will be responsible for technical backstopping of the project in the WRC home office. WRC staff will make 1 visit to the project per year for project monitoring and training of field staff. Each visit will consist of approximately 14-21 days.

Section G. MANAGEMENT AND LOGISTICS

G.1 Each area coordinator will have 1 4-wheel drive vehicle in order to travel throughout their area. In the area of M6 and TPT, health promoters will use the public bus system and bicycles purchased by the CSP. All of the vehicles have been purchased. The bicycles will be purchased and received in April, 1993. These costs and the costs of vehicle maintenance are reflected in the budget. See Appendix F. In some areas in RSJ that are difficult to reach, boats and motorcycles are being purchased with other funds. Extra money has also been budgeted for use when there are unforeseen travel difficulties.

G.2 Supplies and equipment which the CSP still needs to obtain are 8 refrigerators, 4 slide projectors, 1 overhead projector, 1 copier, 1 typewriter, 1 computer desk, cameras, backpacks, boots, training supply kits, and an emergency supply of ORS. All of these, except the ORS and the training supply kits, are being purchased and transported in April, 1993. They will be transported by CSP vehicles to the project sites.

Section H. DIP SCHEDULE OF ACTIVITIES (See Appendix H.)

Section I. COUNTRY PROJECT BUDGET

See Appendix F for the DIP Country and HQ budgets. Expenses for the country portion of the Nicaragua CSVIII are underwritten by both a USAID centrally funded grant, and a USAID Mission Grant. The summary of the total budget (country and HQ) is as follows (USAID/W = AID Central Funds; WRC/W = World Relief Central Funds; USAID/N = AID Mission Funds; WRC/N = World Relief Mission Funds):

USAID/W = $500,000; WRC/W = $167,000; Total Central grant funds = $667,000; USAID/N = $383,122; WRC/N = $157,910; Total Mission grant funds = $541,032.

A detailed explanation of the country budget follows:

PROCUREMENT:

USAID Central Grant Funds. Other Equipment: Includes 2 vehicles for use in M6 and RSJ. Other Supplies: Includes educational materials and vitamin A capsules for M6 and RSJ project areas.

USAID Mission Grant Funds. Office Equipment: Includes 4 desks with chairs, 1 filing cabinet, 4 filmstrip/slide projectors, 1 overhead projector, 1 computer and printer, 1 typewriter, 1 copier and 1 fax machine. EPI Equipment: Funding for 8 kerosine refrigerators to assist MINSA for delivery of immunizations to remote areas. Other Equipment: Includes 1 vehicle for use in TPT, 8 bicycles, growth monitoring scales and miscellaneous equipment.

Office Supplies: Includes supplies for the central office and 3 regional offices. ORT Supplies: Includes an emergency supply of ORS. Other Supplies: Funding for educational materials and vitamin A capsules for the TPT project area.

Consultants: Includes the cost of an external HIS consultant.

EVALUATION:

USAID Central Grant Funds. Mid-term Evaluation: Includes the costs for travel/per diem and fees for 1 external evaluator and travel/per diem expenses for WRC HQ and field staff.

USAID Mission Grant Funds. Baseline Survey: Includes travel/per diem expenses for HQ and field staff. Final Evaluation: Includes the costs for travel/per diem and fees for 1 external evaluator and travel/per diem expenses for WRC HQ and field staff.

PERSONNEL:

USAID Central Grant Funds. Technical: Includes **40%** of the half-time Health Adviser salary, 93% of the Program Director salary, 78% of the Development Education Specialist salary. Also includes the salaries for 2 Area Coordinators and the health promoters in M6 and RSJ project areas. Clerical: Salary for 1 Secretary.

USAID Mission Grant Funds. Technical: Includes 60% of the half-time Health Adviser salary, 7% of the Program Director salary, 22% of the Development Education Specialist salary. Also includes the salaries for 1 Area Coordinator, the health promoters and 1 nutrition promoter in TPT. Administration: Includes 50% of the salary for 1 Accountant/Controller and the salary for 1 Regional Administrator. The other 50% of the Accountant/Controller salary will be paid by the USAID Mission agricultural grant.

TRAVEL/PER DIEM:

USAID Central Grant Funds. Domestic Travel: Costs include all travel/lodging costs for central office staff, area coordinators, health promoters and brigadistas in M6 and RSJ. Also includes costs for MINSA EPI workers to distant sites for immunization campaigns in RSJ. International Travel: Includes 1 trip each year for the HQ CS Director **and the CS** Administrative Coordinator for project monitoring, CS conference attendance for the Program Director and travel expenses for several of the TPT project staff to the Honduras CS project.

USAID Mission Grant Funds. Domestic Travel: Costs include all travel/lodging costs for central office staff, area coordinator, health promoters and health volunteers in TPT. International Travel: Includes 23% of costs for several of the project staff to make a trip to the Honduras CS project.

COMMUNICATIONS:

USAID Mission Grant Funds. Includes printing expenses for HIS registers and other printing, $400/month for telephone/fax and $100/month for postage.

FACILITIES:

USAID Mission Grant Funds. Includes 50% of the rental costs for the central office and costs for 1 regional office for the M6 and TPT project areas. The other 50% of the rental costs of the central office and the rental of the RSJ regional office will be paid by the USAID Mission agricultural grant.

OTHER DIRECT COSTS:

USAID Central Grant Funds. Includes operating and maintenance costs, vehicle insurance and fuel for the 2 vehicles for M6 and RSJ.

USAID Mission Grant Funds. Includes operating and maintenance costs, vehicle insurance and fuel for 1 vehicle in TPT.

INDIRECT COSTS: Includes overhead charged on administrative costs at a rate of 24.7% for each of the grants.

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DIP TABLE A: COUNTRY PROJECT SUMMARY -- USAID/Washington Grant Only

PVO/Country: World Relief/Nicaragua Project Duration (mmlddiyy): start date September 30. 1992 estimated completion date September 29, 1995

1. BUDGET SUMMARY IN U.S. DOLLARS

(a) a. By year of project	(b) A.I.D. Contribution (field + HQ)	(c) PVO Contribution (field + HQ)	(d) Total Contribution (field + HQ)
Year 1	$146,474	$63,626	$210,100
Year 2	$190,688	$62,635	$253,323
Year 3	$162,838	**$40,739**	$203.577
Country project total	$500,000	$167,000	$667,000

b. Percent of PVO Match 25%

(PVO Contribution divided by Total Contribution: sum 01 column "c" divided by the sum 01 column "d")

2. SIZE OF THE POTENTIAL BENEFICIARY POPULATION

Note POTENTIAL BENEFICIARIES are defined as those in the project area who are eligible to receive services for a given intervention, no, the percent you expect to provide services lo - which may be smaller than the eligible population

(e) a. Current population within each age group*	(f) Number of Potential Beneficiaries
infants, 0- 11 months	5,631
children, 12-23 months	5,379
children, 24-59 months	15.201
children, 60-71 months (If Vitamin A component)	
females, 15- 19 years (high risk pregnancy)	7.874
females, 20-34 years	17,695
females, 35-49 years (high risk pregnanty)	8,579
Other (specify)	
Other (specify)	
b. Additional births	
Total estimated live births. vears 2 and 3	11,964
c Total Potential Beneficiaries	72,323

*Note **Females** (ages 15 - 49) **should only be Included as potent18** beneficiaries **where they are** direct beneficiaries of services **(lor example. TT** immunizations, or family planning services), **and not** for educational **interventions (lor example.** education **on proper use of ORT)**

3. CALCULATION OF A.I.D. DOLLARS per BENEFICIARY per YEAR

a. Total A.I.D. Contribution to Country Project (sum of column "b" in table 1, this page,	$500,000
b. Total Potential Beneficiaries (sum of column "f" in table 2 this page)	72,323
c. A.I.D. Funding per Beneficiary for Project (lane a dwided by line b in table 3. this page)	$6.91
d. A.I.D Funding per Beneficiary per year	$2.30

4. PERCENT OF TOTAL A.I.D. CONTRIBUTION by INTERVENTION

Place percentages in shaded areas only; percentages must add lo 100%

INTERVENTION	Percent of Project tttort (%)	Percent ot A.I.D. Funds in U.S. dollars
a. Immunization	17	$83,500,
b. Control of Diarrhea1 Diseases	15	$73.500
c. Nutrition Education	21	$105~000~'
d. Vitamin A	19	$94.000
e. Control of Pneumonia	10	$48,000
f. Maternal Care/Family Planning	10	$48,000
g. Malaria Control	10	$48,000/i
h Other (specify)		$0
i. Other (specify)		$0

"A

Appendi x A · Page 5:

NOTE: Accurate population data was difficult to obtain from MINSA or other sources in rwaragua.
Population figures are based on our best estimates from available data

DIP TABLE A: COUNTRY PROJECT SUMMARY – USAID/Washington & USAID/Mission Grants

PVO/Country **World Relief/Nicaragua** **Project Duration (mm/dd/yy):** **start date** **September 30, 1992** **estimated completion date** **September 29, 1995**

1. BUDGET SUMMARY IN U.S. DOLLARS

(a)	(b)	(c)	(d)
a. By Year of project	**A.I.D. Contribution (field + HQ)**	**PVO Contribution (field + HQ)**	**Total Contribution (field + HQ)**
Year 1	$275,461	$160,412	$435,873
Year 2	$316,383	$88.015	$404.3981)
Year 3	$291,278	$76,483	$367,761
Country project total!	388$3.122	2 4 . 9 1 0	$1,208,032

b. **Percent of PVO Match** c 27%

(PVO Contribution divided by Total Contribution: sum of column "c" divided by the sum of column "d")

2. SIZE OF THE POTENTIAL BENEFICIARY POPULATION

Note: **POTENTIAL BENEFICIARIES are defined as those in the project area who are eligible to receive services lor a given intervention, not the percent you expect lo provide services lo - which may be smaller lhan the eligible population**

(e)		(f)
a. Current population within each age group*		**Number of Potential Beneficiaries**
infants, 0–11 months		8,190
children, 12–23 months		7,659
children, 24–59 months		21,658
children. 60-71 months	(If Vitamin A component)	
females. 15–19 years	(high risk pregnancy)	12.085'
females, 20-34 years		27,513
females 35–49 years	(high risk pregnancy)	13,432
Other (specify)		
Other (specify)		
b. Additional births		
Total estimated live births, years 2 and 3		17,402
c Total Potential Beneficiaries		**107,939**

*** Note Females (ages 15 - 49) should only be Included as potential beneficiaries where they are direct beneficiaries of services (for example, TT immunizations, or family planning services). and not for educational interventions (for example. education on proper use 01 ORT)**

3. CALCULATION OF A.I.D. DOLLARS per BENEFICIARY per YEAR

a. Total A.I.D. **Contribution to** Country **Project** (sum of column "b" in table 1. this **page**)	$883,122
b. Total Potential Beneficiaries (sum of column "f" in table **2**, this **page**)	107,939
c. A I.D. Funding per Beneficiary for Project (**line** a divided **ty** line **b** in **fable 3** this **page**)	$8.18
d. A.I.D Funding per Beneficiary per year (line c divided by 2 years)	$2.73

4. PERCENT OF TOTAL A.I.D. CONTRIBUTION by INTERVENTION

Place percentages in shaded areas only; percentages must add to 100%

INTERVENTION	Percent of Project Effort (%)	Percent of A.I.D. Funds in U.S. dollars
a. Immunization	17	$147,481
b. Control of Diarrhea1 Diseases	15	$128,053
c. Nutrition Education	20	$179,274
d. Vitamin A	19	$166,910
e. Control of Pneumonia	10	$87,429
f. Maternal Care/Family Planning	10	$87,429
g. Malaria Control	10	$86,546
h. Other (specify)		$0
i. Other (specify)		$0

Population figures are based on our best estimates from available data.

DIP TABLE A: COUNTRY PROJECT SUMMARY TABLE

5. ACTIVITIES: Circle all activity codes that apply for each intervention

a. Control of Diarrhea1 Diseases
- (1) = Distribute ORS packets
- (2) = Promote use of ORS packets
- 3 = Promote home-mix
- (4) = Promote SSS home-available fluids
- (5) = Dietary management of diarrhea
- (6) = ORT training
- (7) = Hand washing

Other _____ (specify)

b. Immunization
- 1 = Distribute vaccines
- 2 = Immunize mother/children
- (3) = Promote immunization
- 4 = Surveillance for vaccine preventable diseases
- (5) = Training in immunization

Other _____ (specify)

c. Nutrition
- 1 = Distribute food
- 2 = Provide iron, folic acid, vitamins
- (3) = Provide scales and growth charts
- 4 = Sponsor mother-to-mother breastfeeding/promotion support groups
- = Conduct food demonstrations
- % = Counsel mothers on breastfeeding and weaning practices
- 7 = Conduct group sessions
- 88 = Training in breastfeeding and weaning
- 9 = Training in maternal nutrition
- 80 = Training in growth monitoring

Other _____ (specify)

d. Vitamin A
- 1 = Vitamin A deficiency treatment
- (2) = Vitamin A supplementation
- 3 = Vitamin A fortification
- 4 = Vitamin A education
- 85 = Vitamin A food production

Other _____ (specify)

e. Control of Pneumonia
- 1 = Promote antibiotics
- (2) = Health education
- 3 = Improve referral sites
- (4) = Training

Other _____ (specify)

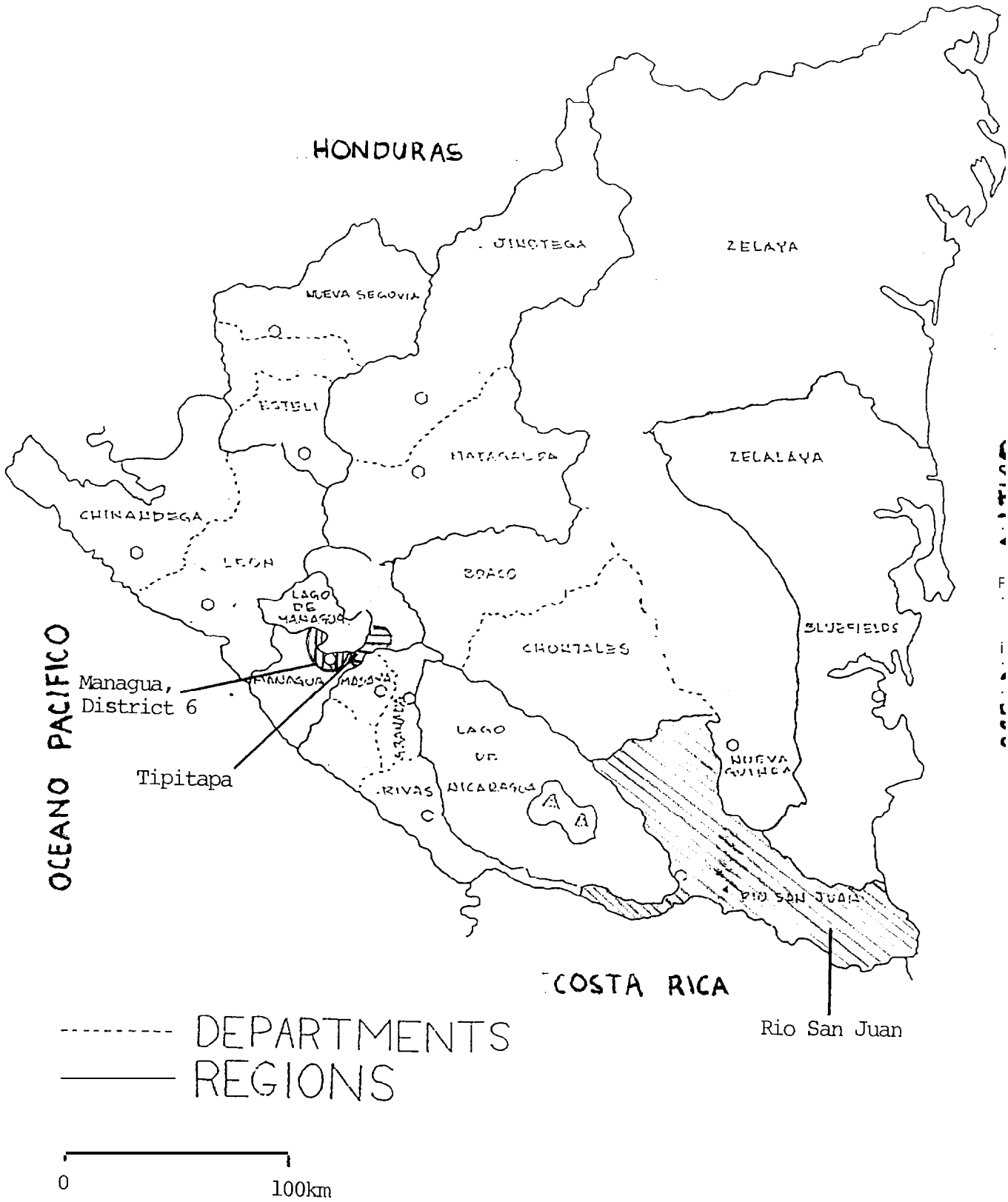
f. Maternal Care/Family Planning
- 1 = Distribute contraceptives
- 2 = Promote exclusive breastfeeding to delay conception
- (3) = Promote child spacing or family planning
- 4 = Antenatal care
- (5) = Promote malaria prophalaxis
- 6 = Train TBAs in improved birth practices
- (7) = Family planning training

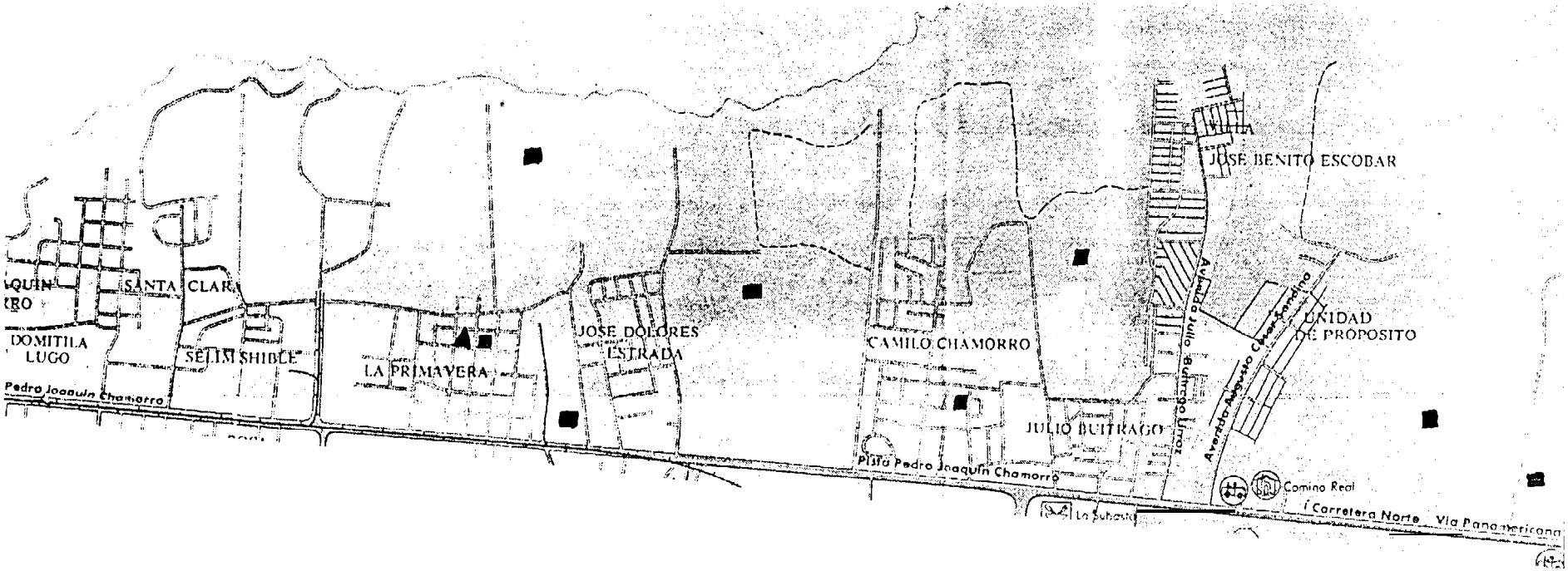
Other _____ (specify)

g. Malaria Control
- 1 = Residual insecticides
- 2 = Larvaciding
- 3 = Provision of bednets
- 4 = Provision of commodities
- 5 = Treatment
- 6 = Health education
- 87 = Training

Other _____ (specify)

NICARAGUA

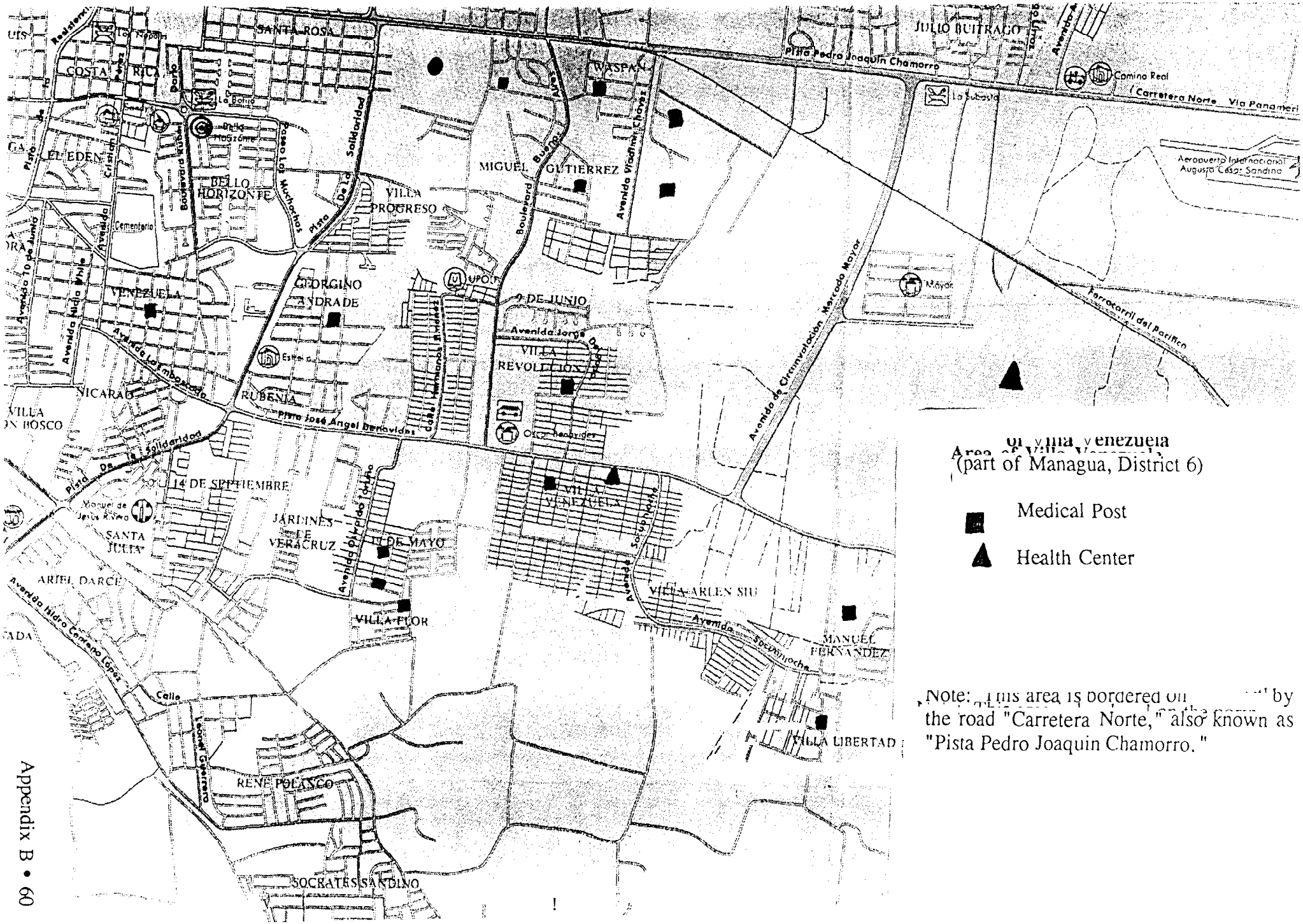

HONDURAS
JINOTEGA
ZELAYA
NUEVA SEGOVIA
ESTELI
MATAGALPA
ZELALAYA
CHINANDEGA
LEON
BOACO
LAGO DE MANAGUA
CHONTALES
BLUEFIELDS
OCEANO PACIFICO
Managua, District 6
MANAGUA
MASAYA
Tipitapa
GRANADA
LAGO DE NICARAGUA
RIVAS
NUEVA GUINEA
RIO SAN JUAN
COSTA RICA
Rio San Juan
DEPARTMENTS
REGIONS
0
100km



Area of Silvia Ferrufino
(part of Managua, District 6)

- ● Medical Post
- ▲ Health Center
- ● General Hospital

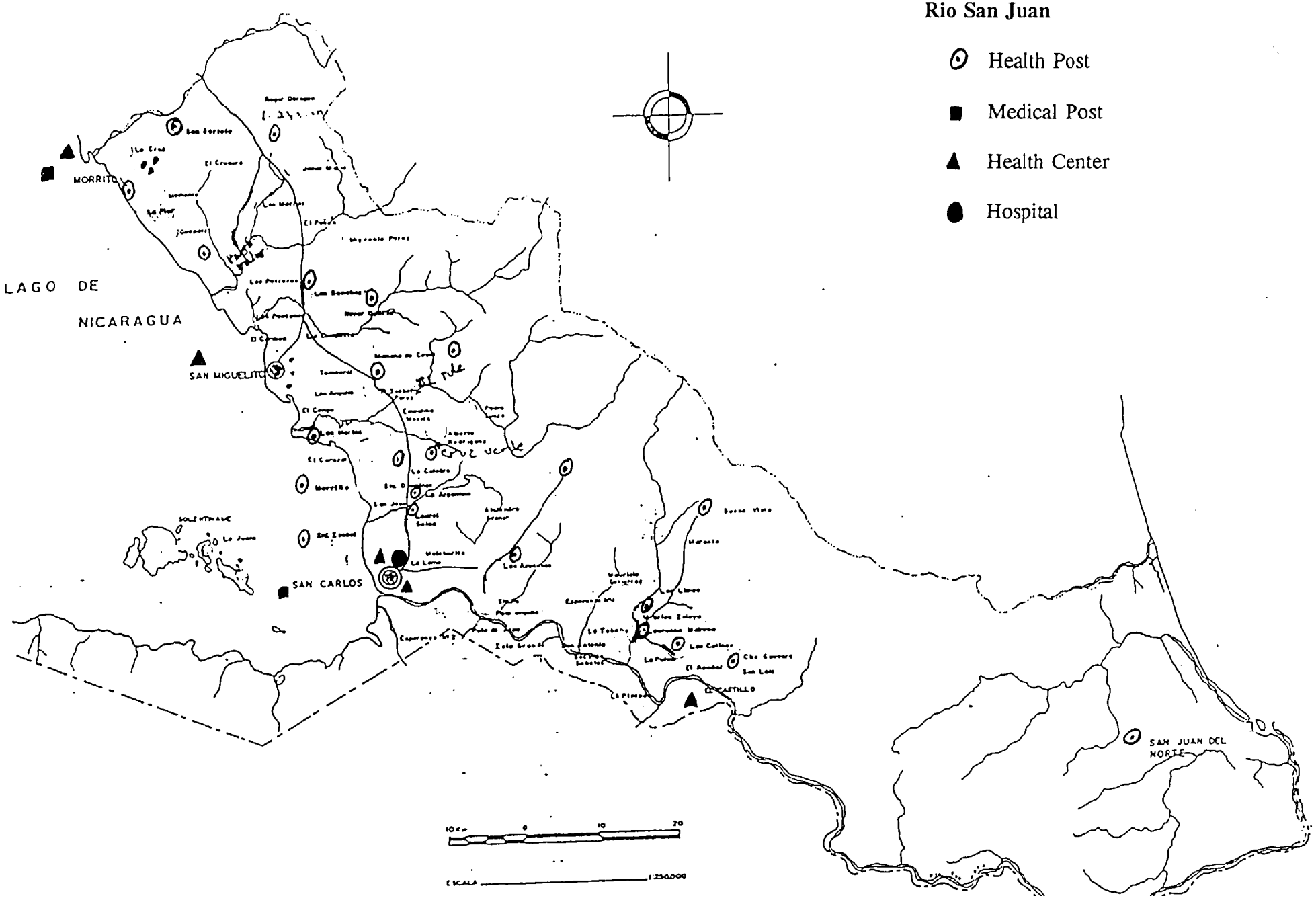
Note: This area is bordered on the south by the road "Carretera Norte," also known as "Pista Pedro Joaquin Chamorro."

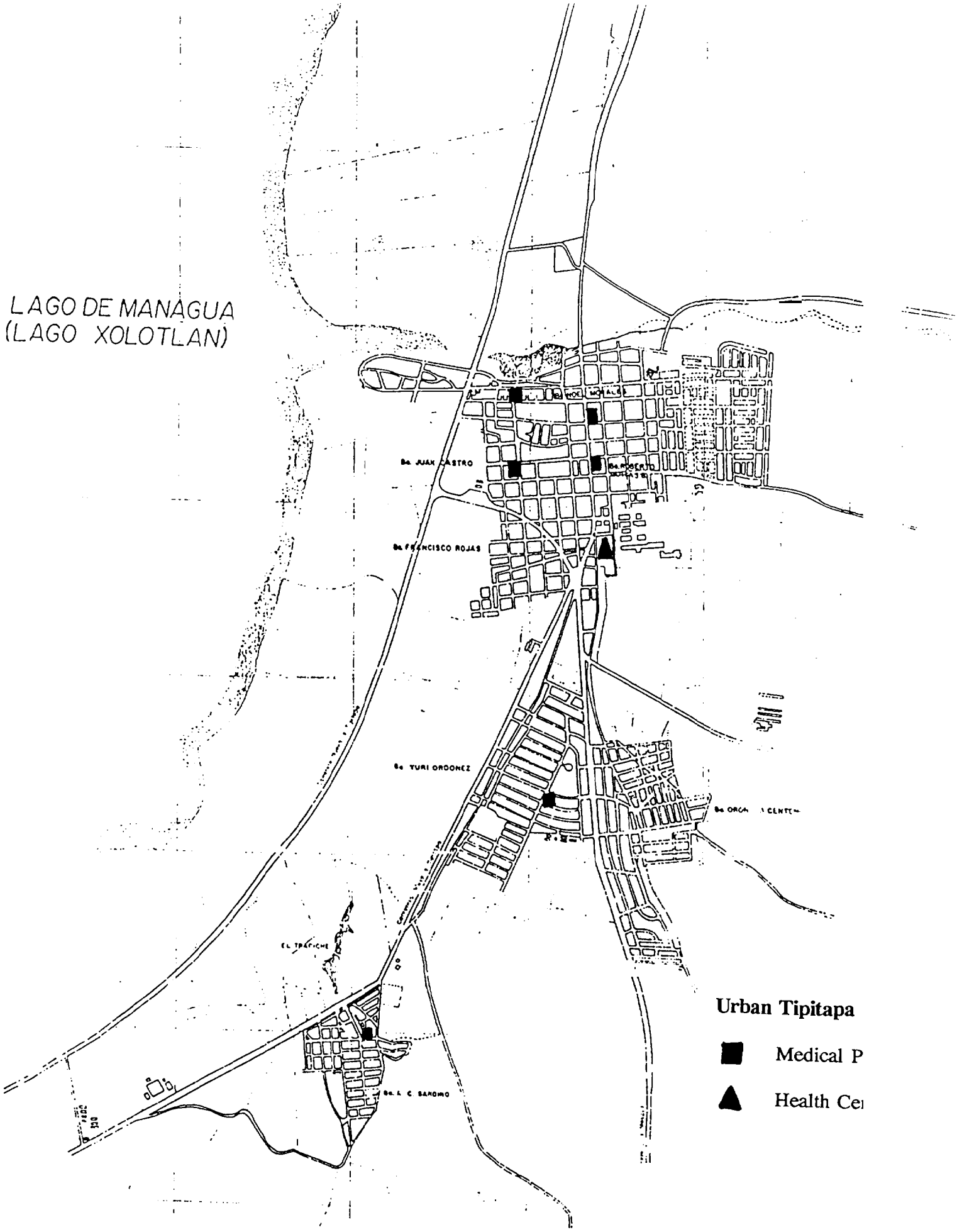


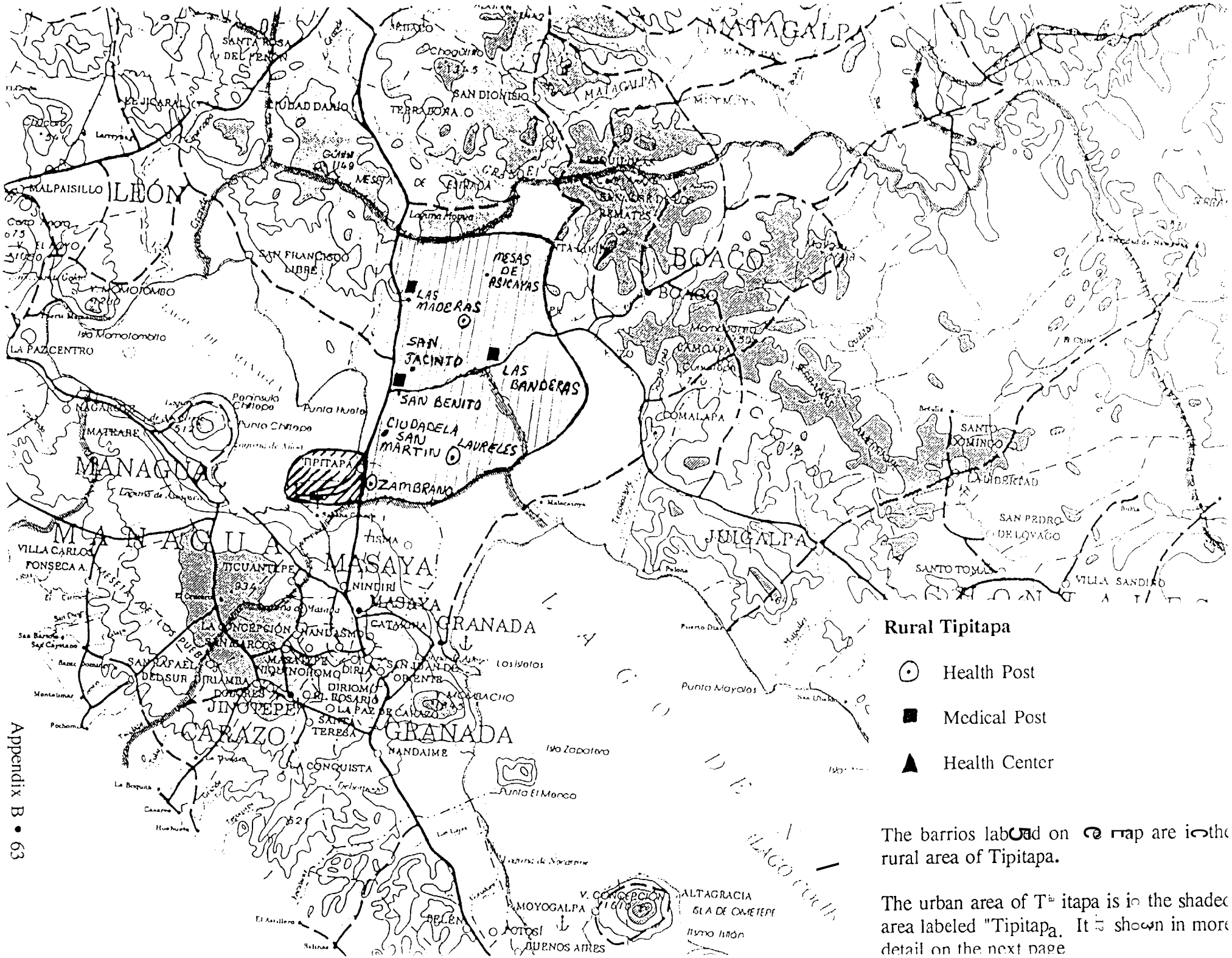
Area of Villa Venezuela
(part of Managua, District 6)

- Medical Post
- Health Center

Note: This area is bordered on [illegible] by the road "Carretera Norte," also known as "Pista Pedro Joaquin Chamorro."


Rio San Juan
Health Post
Medical Post
Health Center
Hospital
LAGO DE
NICARAGUA
MORRITO
SAN MIGUELITO
SAN CARLOS
SAN JUAN DEL
NORTE


LAGO DE MANAGUA
(LAGO XOLOTLAN)
Urban Tipitapa
Medical P
Health Ce



Rural Tipitapa

- ⊙ Health Post
- ■ Medical Post
- ▲ Health Center

The barrios labeled on the map are in the rural area of Tipitapa.

The urban area of Tipitapa is in the shaded area labeled "Tipitapa." It is shown in more detail on the next page.

APPENDIX C

Letters of Support from:

1. Nicaraguan Ministry of Health
2. MENSA Region III (SILAIS Oriental)
3. MINSA Region IX (Special Zone III)
4. Ministry of External Cooperation
5. Asociacion Pro Bienestar de la Familia Nicaraguense (PROFAMILIA)
6. Mision Centroamericana (Central American Mission)

APPENDIX D
JOB DESCRIPTIONS

Job Title: Child Survival Program Director

Scope: To be responsible for all the aspects of the Child Survival Program in Nicaragua, including the management of staff, planning and implementation of program strategy. The Director will work in coordination with the MPH Adviser and the Education Specialist to make decisions regarding the program. Reports to the Nicaragua Country Director.

Responsibilities:

1. To assist in the selection and supervision of all project staff.
2. To coordinate with the Ministry of Health (MINSA) and PROFAMILIA staff to meet the project objectives.
3. To develop a Health Information System with indicators for all the project objectives and to monitor the progress of the project based on these objectives.
4. To monitor project expenses according to the budget and to make annual budget projections for the project.
5. To be responsible for all reports to the World Relief Nicaragua Country Director according to the USAID guidelines (Detailed Implementation Plans, Annual Reports, Quarterly Activity Reports and Monthly Financial Reports).
6. To help plan for and participate in the project evaluations.
7. To oversee the design and writing of the child survival curriculum and training.
8. To assure that MINSA strategies and interventions are reflected in program curriculum.
9. Other duties as assigned by the World Relief Nicaragua Country Director.

Job Title: Child Survival Education Specialist

Scope: To design, plan, direct, coordinate and supervise the training programs for the Child Survival Program at all levels. Reports to the Nicaragua Child Survival Program Director.

Responsibilities:

1. To design the overall training program.
2. To plan the execution of the training program at all levels.
3. To decide in a team the educational methodology to be used, in accordance with the target population.
4. To communicate the implementation procedures for each of the educational methods.
5. To coordinate the educational work in each of the project areas.
6. To periodically evaluate the effectiveness of the educational strategy and activities used, making necessary adjustments.
7. To prepare and submit at the time designated by the program director, the monthly, quarterly and annual reports of the activities that are under his/her responsibility; likewise, a plan of action and all other reports that are requested of him/her.
8. Any others that may arise throughout the life of the project.

Job Title: Child Survival Area Coordinator

Scope: This is an important position for the success of the Child Survival Project. It is a management position in which strong technical background is needed in the field of public health and child survival. The responsibilities of this position include the capacity to guide health interventions and community development, taking into account the best possible utilization of the local and external resources available. The Area Office will be located in close proximity to the project area of responsibility so that the coordinator will be able to efficiently carry out his/her tasks. The schedule will be adjusted according to the necessities and conditions of the area where he/she will be working. Reports to the Child Survival Project Director.

Responsibilities:

1. To participate in the selection of health promoters.
2. To plan and implement in coordination with the health promoters, the different interventions of the project in the work area.
3. To promote, support and evaluate periodically the development of the activities with regard to project interventions.
4. To promote and coordinate feedback activities between the project, the Ministry of Health and other private agencies that are working in the geographic area.
5. To train the health promoters and support them in the development of all their activities.
6. To prepare and submit periodic reports and work plans to the Project Director.
7. To efficiently carry out other functions or tasks that are assigned.

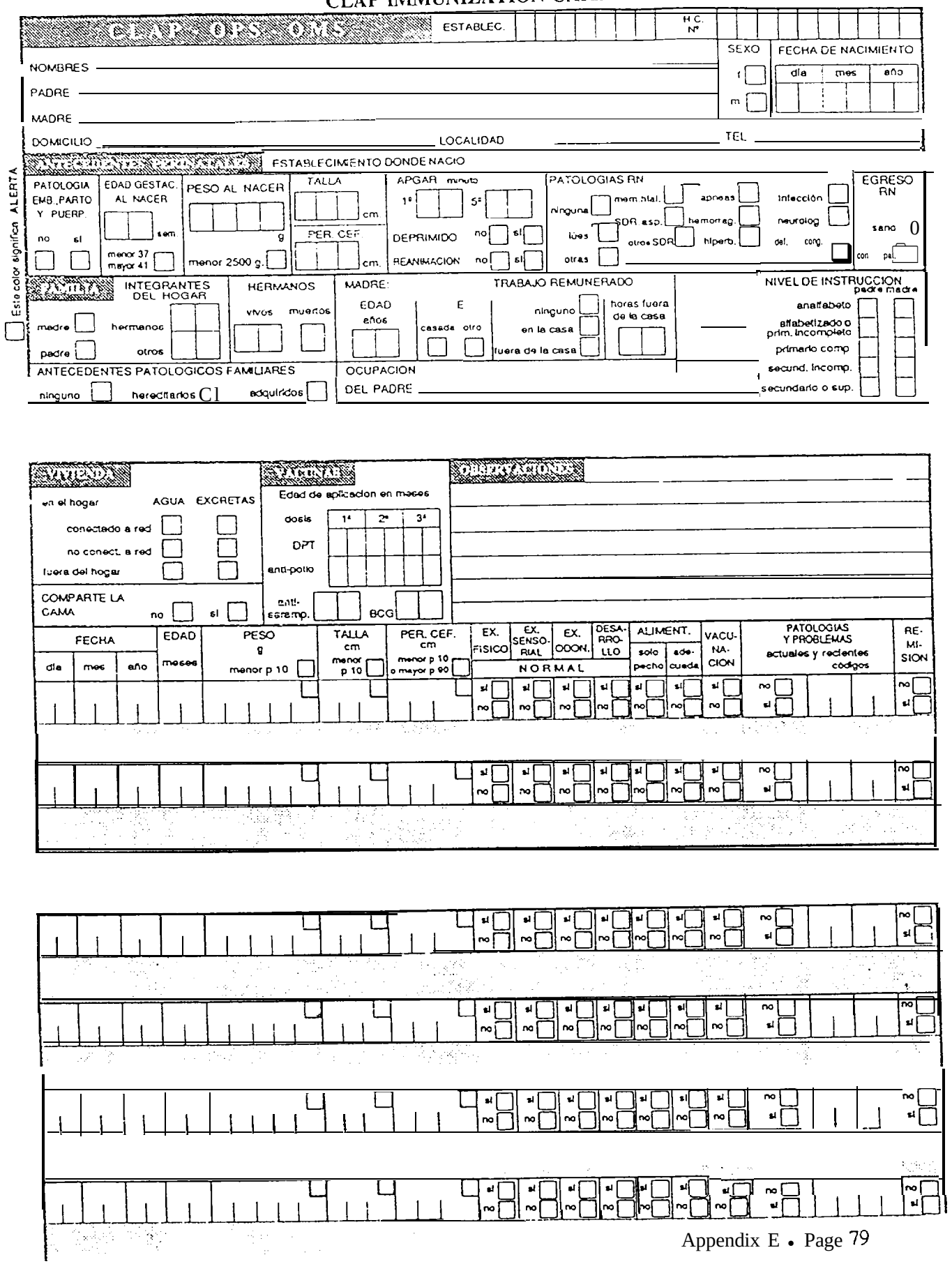
Job Title: Child Survival Health Adviser

Scope: To provide administrative support and medical guidance to the Child Survival Program in Nicaragua. The medical consultant will work in coordination with the MPH Adviser and the Education Specialist to make decisions about the program. Reports to the Nicaragua Country Director.

Responsibilities:

1. To assist in the process of interviewing, selecting and training of the area coordinators and health promoters.
2. To adapt all the education materials to fit the strategies of MINSA.
3. To assist in the development and review of the baseline survey and the Health Information System.
4. To assist in the analysis of the survey findings and in the elaboration of the Detailed Implementation Plan.
5. To be informed on any changes needed in project strategies and interventions and to inform the health staff about any needed changes in the education materials.
6. To integrate the participative instructional methodology throughout the program.
7. To establish and maintain contact with the key personnel of MINSA.
8. To assist in the organization of training workshops.

CLAP IMMUNIZATION CARD



Controles de Salud para el hogar

VACUNAS

ANTIPOLIO

DOSIS	FECHA
1 a.	
2 a.	
3 a.	
4 a.	
5 a.	
6 a.	
7 a	
8 a.	
9 a.	
10 a.	
11 a.	
12 a.	
13 a.	
12 a.	
15 a.	

BC○

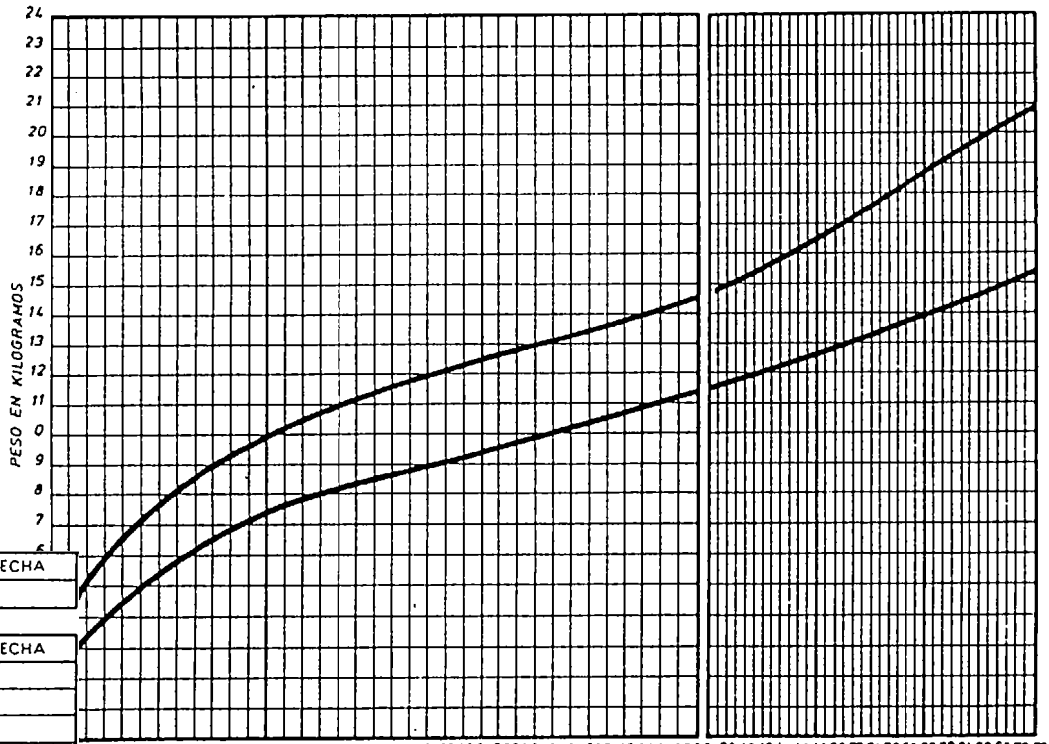
DOSIS	FECHA
1 a.	

DPT

DOSIS	FECHA
1 a.	
2 a.	
3 a.	
Refuerzo	

SARAMPION

DOSIS	FECHA
1 a.	



ABREVIATURAS

: Diarrea

PT

D

AM

P.

parasitos

COMO CRECE SU NIÑO

Su hijo va bien

Su hijo no progresa

Su hijo está mal

CITAS AL CONTROL DE CRECIMIENTO

FECHA CONTROL	EDAD (meses)	PESO (kg)	TALLA (cm)	DENVER	ALICOM	FECHA PROXIMA CONTROL

CUANDO SU NIÑO TENGA DIARREA:

1.- No suspender Lactancia Materna o alimentación que recibe.

2.- Dele al niño ○ taza de Suero Oral después de cada obrada.

3.- No dele medicamentos.

4.- Lleve al niño al Puesto, Centro de Salud o a Hospital al Programa de Control.

GUIA DE ALIMENTACION - ler. AÑO DE VIDA

MESES DE EDAD	
0-4	LECHE MATERNA, exclusivamente
4-6	LECHE MATERNA, más: - Jugo da frutas y vegetales - Pure de frutas y verduras ibanano. quequisque, papa. otros) - Cereales (atol de avena, maíz, malcena. cebada. etc.) - Frijoles colados - Arroz, tortilla majada. pan - Huevo tibio Evitar pacha o biberón: usar taza o cuchara
6 - 8	LECHE MATERNA Todo lo que le daba anteriormente. mds: - Huevo cocido - Queso o cuajada - Trocitos da frutas y verduras - Tallarines o fideos
8-10	LECHE MATERNA , pudiendo alternarse con leche de vaca se agregará a todo lo anterior: Carne molida. rallada. o majada (pescado, garrobo. vaca, cerdo. visceras o menudos. etc.)
0-12	LECHE MATERNA, leche de vaca y todo lo que consume la familia

) DAR AL NIÑO CAFE, TE, LICOR 0 BEBIDAS GASEOSAS

DESARROLLO NORMAL DEL NIÑO

MESES DE EDAD	
0-3	- Succiona y traga bien - Generatmente pass durmiendo - Reacciona a los ruidos - Alza la cabeza - Sigue objetos con la mirada - Sonrie y reconoce a su madre
3-6	- Se vuelve al oir voces - Sostiene la cabeza - Permanece sentado con apoyo - Coge objetos a su alcance y los lleva a la boca - Extiende los brazes a los conocidos - Responde at llamarle por su nombre - Comienza a utilizar la tasa 0 vaso
6-9	- Gatea - Se sienta solo - Se para apoyado - Pronuncia sílabas - Comienza a comer con las manes
9-12	- Entiende prohibiciones y órdenes simples - Dice pa-pa ma-ma - Camina s-ostcnido de las dos manos - Toma por sí solo los l lquidos en taza
12-18	- Camina solo - Puede pronunciar de 5 a 10 palabras - Apila dos o tres cubos - Comicnza a utilirar la cuchara - Inicia pateo de pelota y su lanzamicnto con las manos

Ministerio da Salud, Nicaragua

EXPEDIENTE: _____

UNIDAD DE SALUD: _____

REGION: _____ AREA: _____

Carnet Infantil

Control de Crecimiento y Desarrollo

NOMERE: _____

FECHA DE NACIMIENTO: _____

PESO AL NACER: _____ 9'. APGAR: _____

DIRECCION EXACTA: _____

_____ _____

NOMBRE DE LA MADRE: _____

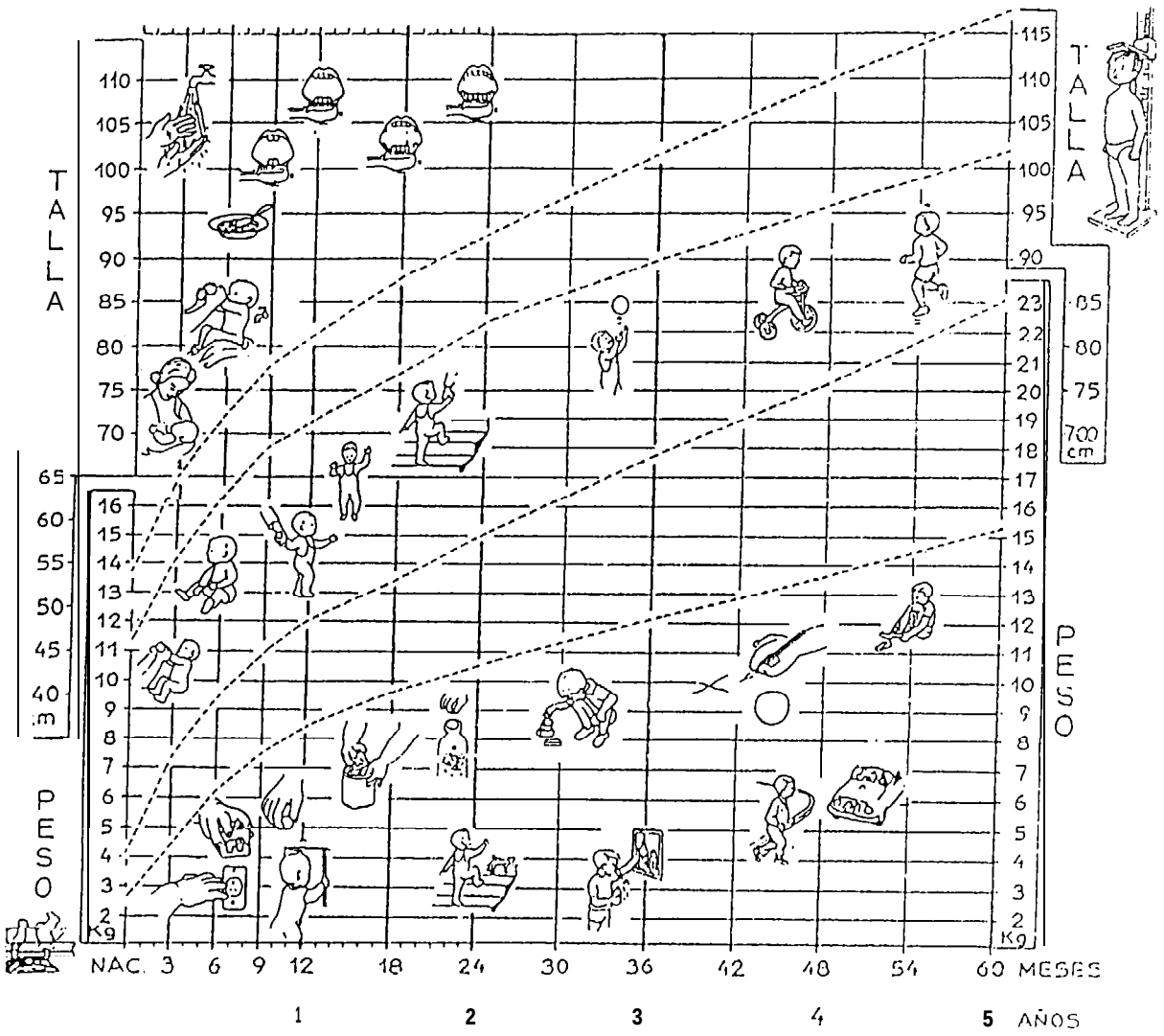
EDAD MATERNA: _____ No. CONT. PRENATALES. _____

PART0 INSTITUCIONAL SI c l NO ☐

PART0 ESPONTANEO - CEFALICO c l CESAREA ☐

FORCEPS c l VAGINAL PODALICO 0

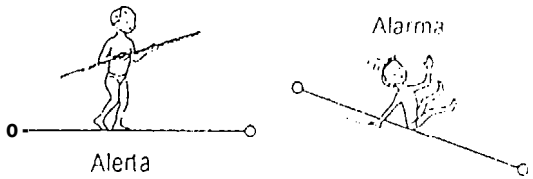
Cuando su niño diarrea tenga:
inmedialamrnta de le suero oral y a la VRO venga



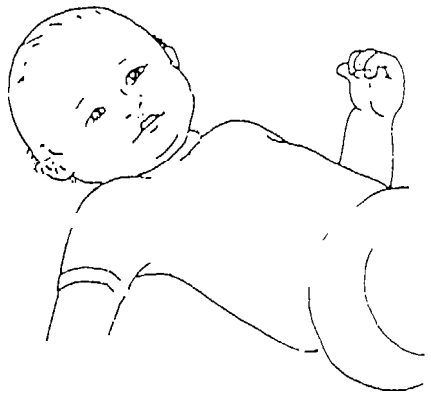
as ilusIraciones deslinadas a la evaluacitn el desarrollo han sido ubicadas en relación **la** edad **del niho**

Percentiles **5** y 95 de referencia NCHS

Cuando **la** tendencia **del** crecimiento entre los os últimos controles es horizontal **(peso o** alla) **o en descenso (peso), significa:**



CARNÉ DEL NIÑO



En case de exlravio se ruega dirigirse a

NOMBRE

DOMICILIO

TELEFONO

LOCALIDAD

CLAP GROWTH CHART

MIINSA PERINATAL CARD (Maternal Card)

Este color significa ALERTA

HCPS CLAP OPS/OMS MINSA NICARAGUA | ESTABLECIMIENTO | Nº HISTORIA CLINICA

APELLIDOS Y NOMBRES

DOMICILIO

LOCALIDAD

EDAD Años — Menor de 19 ☐ Mayor de 35 ☐

ALFABETA: SI ☐ NO ☐

ESTUDIOS: Ning. ☐ Sec. ☐ Prim. ☐ Univ. ☐

AÑOS APROBADOS

ESTADO CIVIL: Unión Casada estable ☐ Soltera ☐ Otro ☐

FUMA: NO ☐ SI ☐ Cuantos

ANTECEDENTES FAMILIARES (NO / SI)
- Diabetes ☐ ☐
- TBC Pulmonar ☐ ☐
- Gemelares ☐ ☐
- Otros ☐ ☐

PERSONALES (NO / SI)
- TBC ☐ ☐
- Diabetes ☐ ☐
- Hipertensión crónica ☐ ☐
- Cirugía pelvico-uterina ☐ ☐
- Infertilidad ☐ ☐
- Otros ☐ ☐

OBSTETRICOS
Anotar el numero de: GESTAS; ABORTOS; PARTOS; Ninguno o más de 4 partos ☐; VAGINALES; CESAREAS
NAC. VIVOS; NAC. MUERTOS
VIVEN ☐ MUEREN 1º sem. ☐ MUEREN después 1º sem. ☐

ALGUN RN PESO MENOS DE 2500g. NO ☐ SI ☐

NACIMIENTO CON MAYOR PESO ____ g

FECHA TERMINACION ANTERIOR EMBARAZO: Mes / Año

EMBARAZO ACTUAL
Peso anterior ____ Kg. Talla (cm.) 1, ____
FPP FUM: Día / Mes / Año
DUDAS: NO ☐ SI ☐
ANTITETANICA: PREVIA SI ☐ NO ☐; ACTUAL 1º ☐ 2º/R ☐; MES GESTA
GRUPO: Rh + ☐ − ☐; Sensibil. NO ☐ SI ☐
HOSPITALIZACION EMBARAZO: NO ☐ SI ☐ Días
TRASLADO: NO ☐ SI ☐ Lugar; Día / Mes / Año

Ex. CLINICO NORMAL	Ex. MAMAS NORMAL	Ex. ODONTOL NORMAL	PELVIS NORMAL	PAP NORMAL	VDRL	ORINA NORMAL	Hb
SI ☐ NO ☐	SI ☐ NO ☐	SI ☐ NO ☐	SI ☐ NO ☐	SI ☐ NO ☐ Día Mes	+ ☐ − ☐ Día Mes	SI ☐ NO ☐ Día Mes	____ g Día Mes

CONSULTA Nº	1	2	3	4	5	6
FECHA						
MOTIVO CONSULTA						
SEMANAS DE AMENORREAS						
PESO (Kg.)						
TENSION ARTERIAL Max./Min. (mm. Hg.)						
F.C.F. (lat./min.) / MOV. FET.						
ALTURA UTERINA Pubis-fondo (cm.)						
PRESENTACION Cef. Pelv o Transv.						
EDEMAS						

PATOLOGIA EMBARAZO PARTO PUERPERIO
- ☐ Embarazo múltiple
- ☐ Hipertensión previa
- ☐ Preeclampsia
- ☐ Eclampsia
- ☐ Cardiopatía
- ☐ Diabetes
- ☐ Infección urinaria
- ☐ Otras infecciones
- ☐ Parasitosis
- ☐ Amenaza parto prematuro
- ☐ Desproporción Cef. Pelv.
- ☐ Hemorragia 1er Trim.
- ☐ Hemorragia 2º Trim.
- ☐ Hemorragia 3er.Trim.
- ☐ Anemia Crónica
- ☐ Ruptura prematura memb.
- ☐ Infección Puerperal
- ☐ Hemorragia puerperal
- ☐ Otra
- ☐ Ninguna

TERMINACION: Esp. ☐ Cesa. ☐ Forc. ☐ Otra ☐
Hora / Min. / Día / Mes / Año

NIVEL DE ATENCION: 3º ☐ 2º ☐ 1º ☐ Domic. ☐ Otro ☐

ATENDIO: Médico / Enf. Obst. / Auxil / Estud./ Part. / Otro
- PARTO ☐ ☐ ☐ ☐ ☐
- NEONATO ☐ ☐ ☐ ☐ ☐

Hist. Clin. RN Nº

Nombre RN

Nombre

Nombre

Episiotomía NO ☐ SI ☐ — Desgarros NO ☐ SI ☐
Alumb. esp. SI ☐ NO ☐ — Placenta comp. SI ☐ NO ☐
Revisión Cavidad NO ☐ SI ☐
Muerte fetal NO ☐ SI ☐ — SI ☐ Parto — SI ☐ Emb. Ignora momento

MEDICACION EN PARTO: Anest Local ☐ Anest Reg. ☐ Anest Gen ☐ Analges ☐ Tranquil. ☐ Oxitoc. ☐ Antibiot. ☐ Otra ☐ Ning. ☐

RECIEN NACIDO
- SEXO F ☐ M ☐
- VIVO SI ☐ NO ☐
- VDRL − ☐ + ☐
- APGAR minutos 1º ☐ 5º ☐ 6 o mas ☐
- REANIMACION SI ☐ NO ☐
- PESO AL NACER ____ 7 Menor 2500 ☐
- EDAD POR EX. FISICO ____ Menor de 37 ☐
- PESO/E.G. Adecuado ☐ Pequeño ☐ Grande ☐
- TALLA ____ Cm.
- PER. CEF ____ C m
- EX-FISICO PREALTA: Normal ☐ Anormal ☐
- EX-NEUROL: Normal ☐ Anormal ☐ Dudoso ☐
- PATOLOGIAS: M. hial. ☐ S. asp. ☐ Otros SDR ☐ Apneas ☐ Hemorragia ☐ Hiperb. ☐ Infecc. ☐ Neurol. ☐ A. Cong. ☐ Otro ☐ Ninguna ☐

PUERPERIO

HORAS O DIAS POST. PARTO O POSTABORTO			
TEMPERATURA			
PULSO (lat./min.)			
TENSION ARTERIAL Max./Min. (mm. Hg.)			
INVOLUCION UTERINA			
CARACTERISTICAS DE LOQUIOS			

RN CON LA MADRE: SI ☐ NO ☐

EGRESO RN: Sano ☐ Traslado ☐ Con Pat. ☐ Fallece ☐

EDAD ALTA/Traslado: ____ Ds. ____ Hs.

EDAD AL FALLECER: ____ Ds. ____ Hs.

ALIMENTO: Pecho ☐ Mixto ☐ Artific. ☐

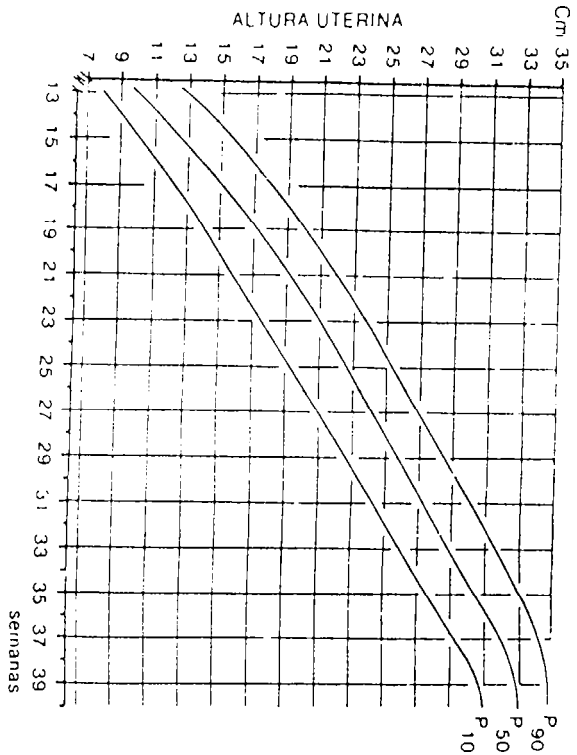
Egreso materno: Sana ☐ Traslado ☐ Con Pat ☐

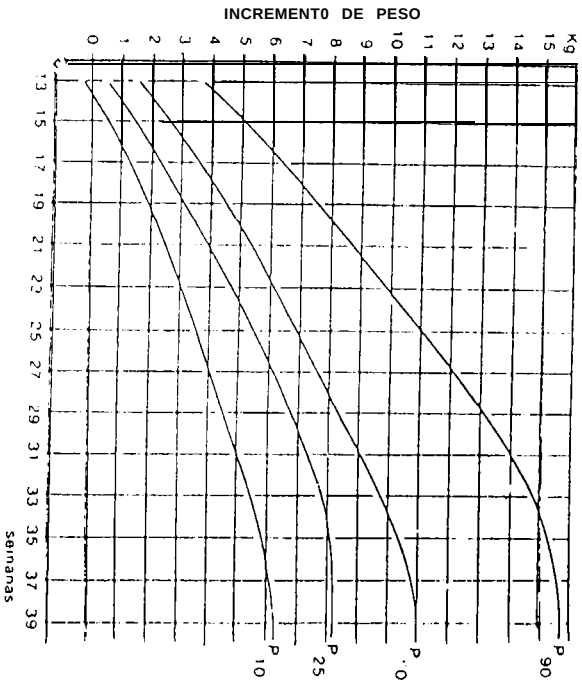
Muerte materna en: Embarazo ☐ Parto ☐ Puerperio ☐

Metodo AC: Ninguno ☐ Condon ☐ Ligadura de trompas ☐ D.I.U ☐ Ritmo ☐ Oral ☐ Otro ☐

Patrones de altura uterina e incremento de peso materno según edad gestacional.

Estas curvas solo podrán ser usadas cuando se conoce la edad gestacional. Con este dato y la medida obtenida que se deberán recabar en cada consulta, se ubica un punto, en su inserción en la gráfica correspondiente.





SEÑORA:
LEA ATENTAMENTE ESTOS CONSEJOS:

El embarazo no es una enfermedad, pero exige vig lancia del equipo de salud para evitar complicacione:

Es importante que cumpla con las siguientes Reco mendaciones.
Preséntese al Centro de Salud tan pronto le falte l: Menstruación.
Repita la consulta cada vez que se le indique.
Cumpla las indicaciones del Médico o Personal de Enfermería.

SIGNOS DEL COMIENZO DEL PARTO

El Parto comienza con la aparición de contracciones frecuentes de la Matriz, rítmicas y generalmente molestas, también puede comenzar con la Ruptura de la Bolsa (Pérdida de Líquido). En tales casos consulte inmediatamente al Servicio de Obstetricia, llevando esta tarjeta que por los datos que contiene será de mucha utilidad para su mejor atención.

ACUDA INMEDIATAMENTE AL SERVICIO DE SALUD MAS CERCANO EN CASO DE:

Pérdida de sangre o líquido por los genitales.
Hinchazón (EDEMAS) en los tobillos, las piernas, las manos o en la cara.
Fiebre o Escalofríos.
Signos del comienzo del Parto, cualquiera sea la edad del embarazo.

CONSULTE AL CENTRO DE SALUD PARA CUALQUIER PROBLEMA

DESPUES DEL PARTO

Usted y su hijo deberán volver a su control en la fecha y lugar que se le indique.

LA MEJOR ALIMENTACION DE SU NIÑO ES LA LECHE MATERNA

REPUBLICA DE NICARAGU

MINISTERIO DE SALUD

A.R.O. SI NO

CAUSA _____

Centro de Salud: _____

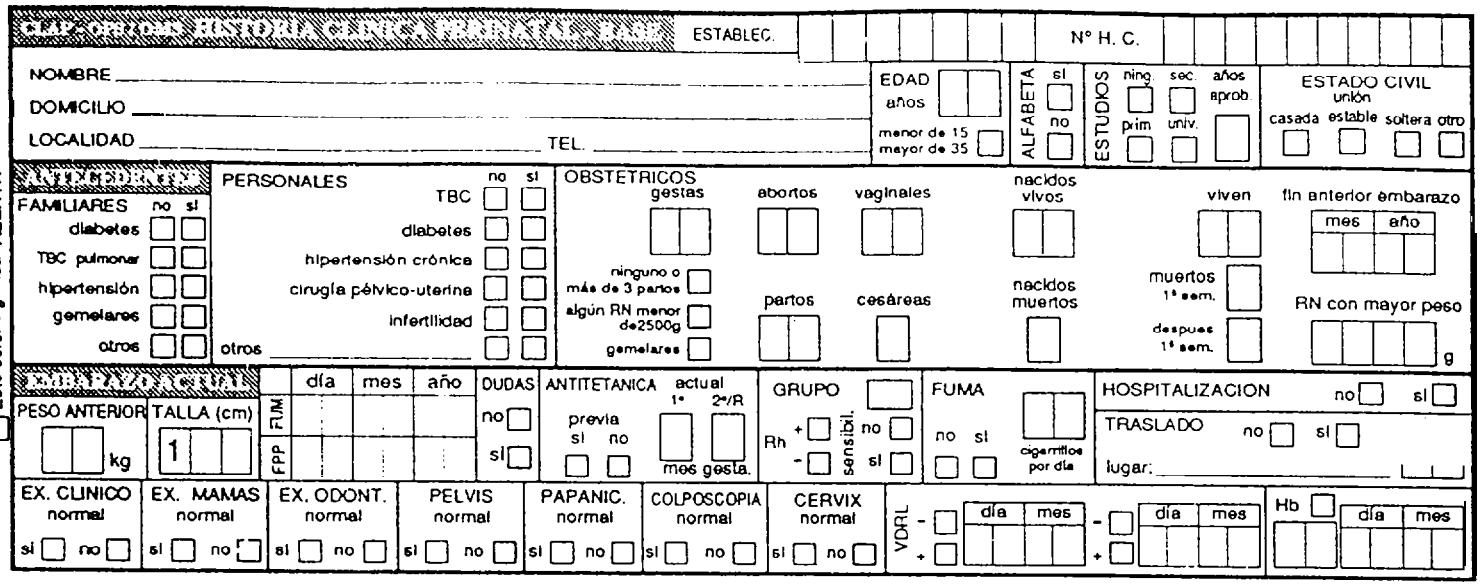
_____

_____

TARJETA PERINATAL

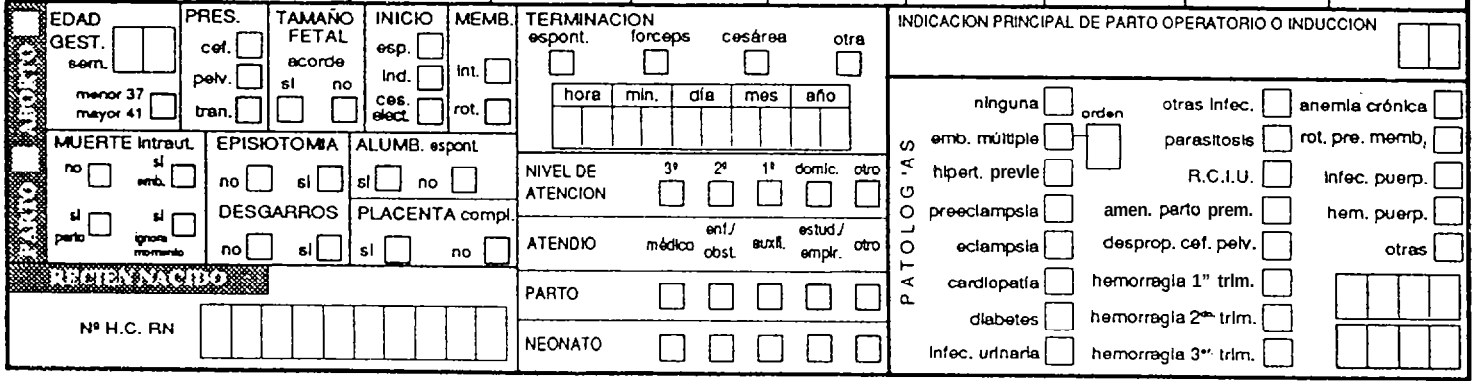
Este Documento contiene Información Médica indispensable para la Salud de la madre y de su hijo. En caso de extravlo se Ruega dirigirse a la Dirección del Centro de Salud.

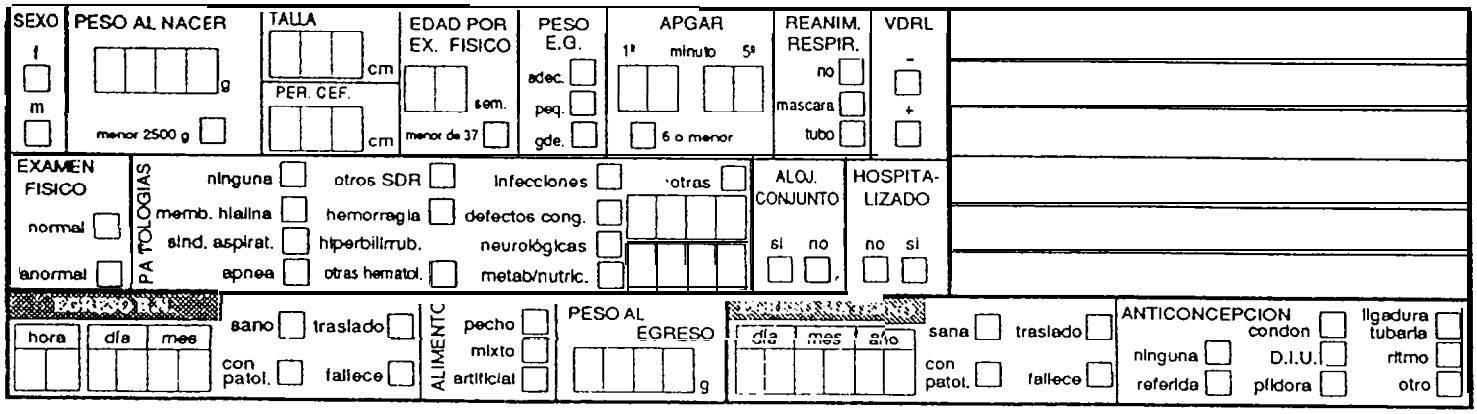
CLAP PERINATAL CARD - (Maternal Card)



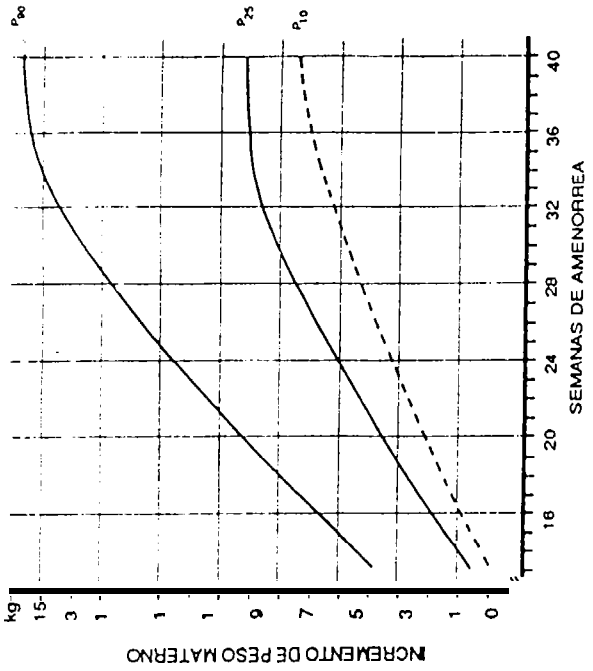
Este color significa ALERTA

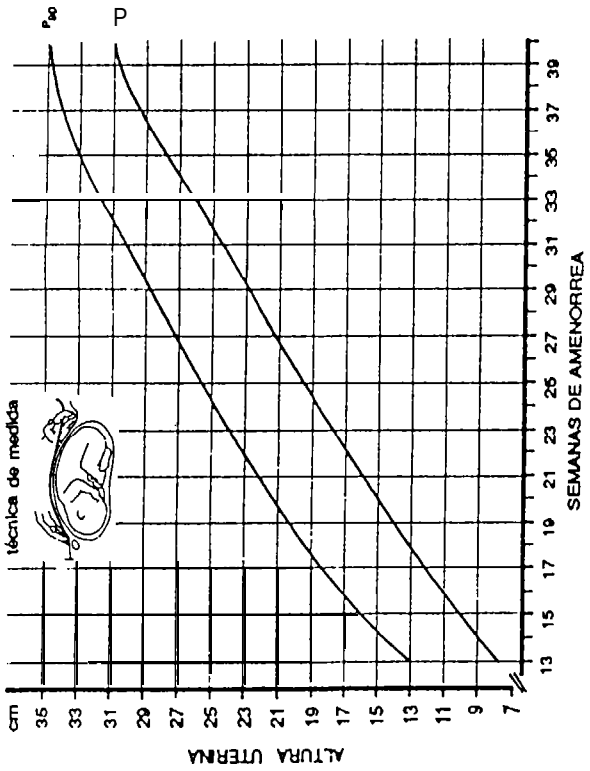
fecha de la consulta	1	2	3	4	5	6	7	8	9
semanas de amenorrea									
peso (kg)									
tensión arterial máx/min (mm Hg)									
alt. uterina / pubis fondo	/	/	/	/	/	/	/	/	/
present. Cef./Pelv./Tr.									
F.C.F. (lat./min.) / mov. fetal	/	/	/	/	/	/	/	/	/





Parrones de aftura uterina e incremento de peso materno según edad gestacional
Una vez conocida la edad gestacional, se ubica en la grdfica correspondiente un punto en su intersección con el valor obtenido





EXAMENES COMPLEMENTARIOS

Día	Mes	

HOSPITALIZACION

ESTABLECIMIENTO	INGRESO		EGRESO	
	Día	Mes	Día	Mes

OBSERVACIONES

CARNE PERINATAL

* El embarazo no es una enfermedad, pero exige vigilancia del equipo de salud para evitar complicaciones.

* Es importante que su ptimera consulta al centro de salud sea lo más pronto posible.

* Cumpla con las citas y las recomendaciones que le sean dadas.

Este carné contiene information indispensable para su salud y la de su hijo. Llevelo con Ud. corn0 si fuera un document0 y entreguelo al equipo de salud toda vez que requiera una atención, ya sea para el embarazo, parto, puerperio o control de credmiento y desarrollo de su hijo.

En case de extravio se ruega dingirse a

NOMBRE

DOMICILIO

TELEFONO

LOCALIDAD

PRO SALUTE MOVI MUNDI

CENTRO LATINOAMERICANO DE PERINATOLOGIA Y DESARROLLO HUMANO OPS/OMS

WORLD RELIEF NICARAGUA- -CHILD SURVIVAL VIII
TABLE 3: HEADQUARTERS BUDGET
(Detailed Implementation Plan - 4/7/93)

World Relief/Nicaragua	YEAR 1		YEAR 2		YEAR 3		TOTAL YEARS I--3		
	A.I.D./W	WRC/W	A.I.D./W	WRC/W	A.I.D./W	WRC/W	A.I.D./W	WRC/W	TOTAL
PROCUREMENT									
Equipment: Printer		501					0	500	500
Office Supplies	300		[redacted]		300		900	0	900
Consultants	750			[redacted]			750	0	750
Services							0	0	0
TOTAL PROCUREMENT	1,050	50(	300	0	300	(	1.650	5oc	2,150
EVALUATION									
Baseline Survey							0	0	0
Midterm Evaluation							0	0	0
Final Evaluation							0	(	0
TOTAL EVALUATION	0	(	0	0	0	0	0	(	0
PERSONNEL									
Technical		1,94[illegible]		2,527		8.095	0	12.567	12.567
Administration		18,14[illegible]		10,724		5,00[illegible]	0	33,87[illegible]	33.879
Clerical		8,19[illegible]		4,482		4,14[illegible]	0	16,821	16,821
Temporary							0	(	0
TOTAL PERSONNEL	0	28,28[illegible]	0	17.7[illegible]3	0	17,249	0	6 3 , 2 6 7	63,267
TRAVEL/PER DIEM									
Domestic	4,860		4,607		2,899		12.3661	0	12,366
International							0	0	0
TOTAL TRAVEL/PER DIEM	4,860	(	4,607	0	0 2.8991		12.3661	0	12,366

A.I.D./W = AID Central Funds WRC/W = World Relief Central Match

WORLD RELIEF NICARAGUA- -CHILD SURVIVAL VIII
TABLE 3: HEADQUARTERS BUDGET
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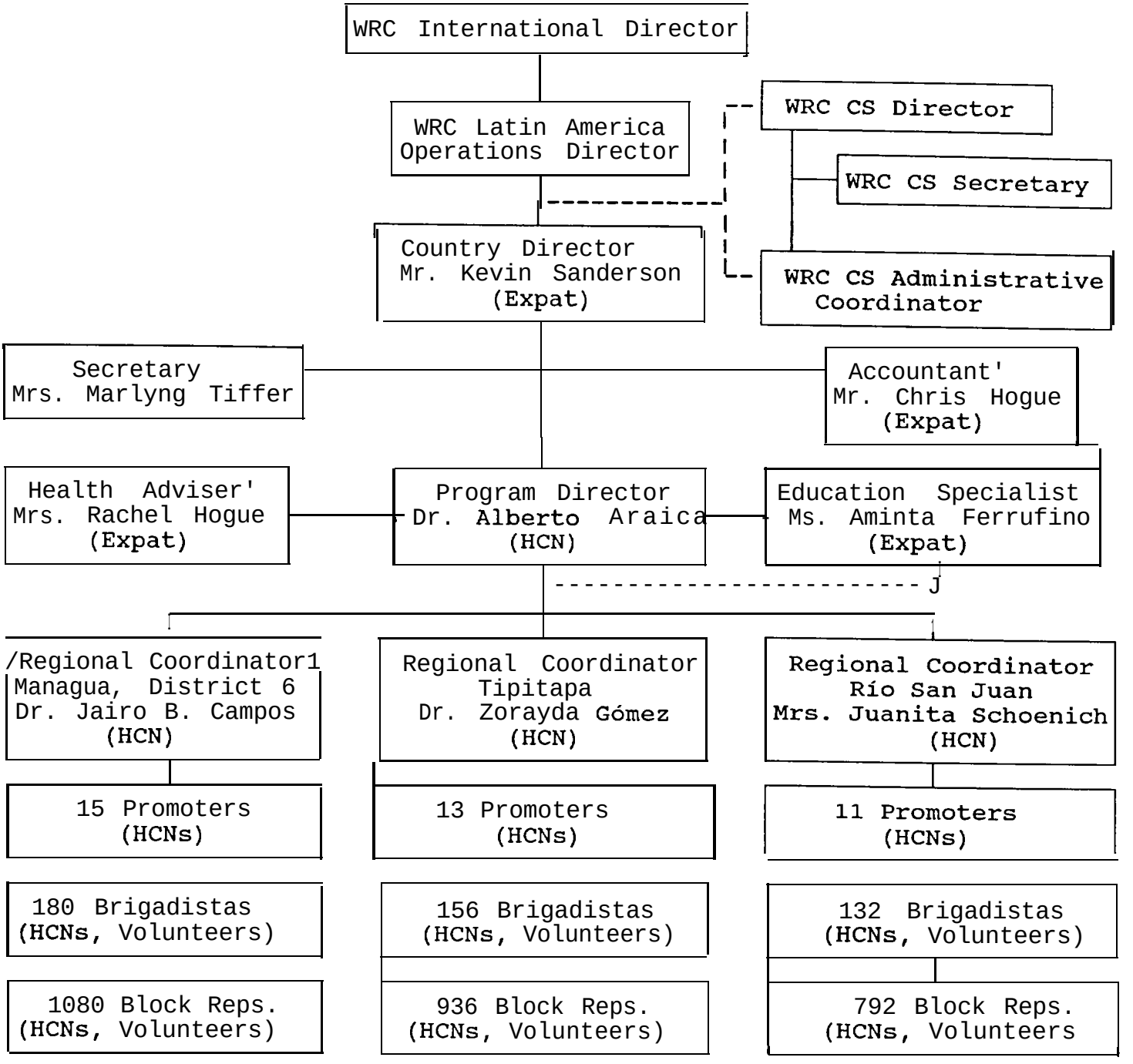
World Relief/Nicaragua	YEAR 1		YEAR 2		YEAR 3		TOTAL YEARS I-3		
	A.I.D./W	WRC/W	A.I.D./W	WRC/W	A.I.D./W	WRC/W	A.I.D./W	WRC/W	TOTAL
COMMUNICATIONS									
Printing		200		200		200	0	600	600
Postage/Delivery System		500		500		500	0	1,500	1,500
Telephone (included in IDC)							0	0	0
Fax (included in IDC)									
TOTAL COMMUNICATIONS	0	700	0	700	0	700	0	2,100	2,100
FACILITIES							0	0	0
OTHER DIRECT COSTS		150		100		100	0	350	350
INDIRECT COSTS 24.7%	8,780		5,790		5,248		19,817	0	19,817
TOTAL	14,690	29,635	10,697	18,533	8,447	18,049	33,833	66,217	100,050

A.I.D./W = AID Central Funds WRC/W = World Relief Central Match

WORLD RELIEF - NICARAGUA
CHILD SURVIVAL VIII PROJECT
ORGANIZATIONAL CHART



HCN = Host Country National
Expat = Expatriate

'Part-time positions (20 hours/week).
All other postions are full-time salaried positions.
The Brigadistas will be responsible for liasons with the Block Representatives (CHCs) and mothers' groups in the community.

DIP TABLE B: COUNTRY PROJECT SCHEDULE OF ACTIVITIES

(Check box to specify **Quarter and Year)**

PVO: World Relief Corporation

Country: Honduras

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Personnel in Position												
a. Project Coordinator	X											
b. Health Educator	X											
c. Accountant/Controller	X											
d. Communitv Health Promoters	X	X			X							
e. Community/Health Volunteers		X				X			X			
2. Health Information System												
a. Baseline Survey												
- Design/preparation	X											
- Data collection and analysis	X											
- Dissemination and feedback to community and project management		X										
b. Consultants/contract to design HIS			X									
c. Develop and test HIS			X									
- Implementation			X									
- Development and feed back to community and project management				X								

PVO: World Relief Corporation

Country: Honduras

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
3. Training												
a. Design	X	X										
b. Training of trainers	X	X	X	X	X	X	X	X	X		X	
c. Training sessions		X	X	X	X	X	X	X	X	X	X	X
d. Evaluation of knowledge of skills			X	X	X	X	X	X	X	X	X	X
4. Procurement of Supplies	X	X	X		X				X			
5. Service Delivery to be initiated												
a. Area 1 (Rio San Juan)												
- Control of Diarrhea1 Diseases			X									
- Immunization		X										
- Nutrition:			X									
Breastfeeding			X									
Maternal Nutrition				X								
Vitamin A			X									
Growth Monitoring/Promotion			X									
- Control of Pneumonia				X								
- Family Planning/Maternal Care				X								
- Other (Malaria)				X								

PVO: World Relief Corporation

Country: Honduras

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
b. Area 2 (District 6/Tipitapa)												
- Control of Diarrhea1 Diseases			X									
- Immunization			X									
- Nutrition:			X									
Breastfeeding			X									
Maternal Nutrition				X								
Vitamin A			X									
Growth Monitoring/Promotion			X									
- Control of Pneumonia				X								
- Family Planning/Maternal Care				X								
- Other (Malaria)				X								
6. Technical Assistance												
a. HQ/HO/Regional office visits	X	X	X				X					X
b. Local Consultants												
c. External technical assistance	X		X									
7. Progress Reports												
a. Annual project reviews				X								X
b. Annual reports				X								X
c. Mid-term evaluation								X				
d. Final evaluation												X